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Lectures on Displacements of the Uterus. By E. R. Peaslee, M.D., LL.D., Professor of Obstetrics and Diseases of Women and Children in the New York Medical College. Session of 1859–60.

LECTURE VIII.

Gentlemen—Before proceeding to the main subject of this lecture—inversion of the uterus—I will briefly call your attention to the displacements of the cervix merely of the uterus. These may be anterior, posterior, or lateral, though the last are less common; and thus we find anteversion, anteflexion, retroversion, and retroflexion of the cervix alone. In other words, the cervix may be found either curved or abruptly bent either forward or backward, though the body of the uterus still remains in its normal position.

The most frequent cause of these displacements of the cervix, is a slight descent of the womb from any of the causes of prolapsus mentioned in the third lecture, (p. 434;) in which case the os is brought in contact with the posterior wall of the vagina, and the cervix for a time sustains the weight of the uterus, and thus yields to it, becoming either curved or bent. Hence, slenderness of the cervix be-

comes a predisposing cause of such displacements; as does also an extraordinary length of this part. You will very seldom find either of these displacements in case of a cervix the vaginal portion of which is not more than three-fourths of an inch long.

The causes of the first degree of prolapsus may therefore be the indirect causes of these displacements; the prolapsus inducing them, as before explained. In case of hypertrophy of the womb from previous inflammation—this organ being as large as in the fourth or fifth month of gestation—the cervix is almost always found to be bent like the neck of a retort.

Whether a given cause will produce mere curvature (version) or flexion of the cervix, will depend on its original power of resistance. If originally quite slender, flexion will be more probable than version. Whether anterior or posterior displacement will result, depends on a variety of circumstances. In case of married patients, posterior displacement is the more common, and sexual intercourse the probable determining cause. It is, however, mainly in cases of enlargement of the neck, with induration, that the latter cause produces this effect. In the unmarried, I have more frequently found the anterior displacements; the os sliding downward and forward on the posterior wall of the vagina.

The lateral displacements are more frequently due to the presence and pressure of an enlarged ovary, or some other pelvic tumor.

Developmental causes, also, though very seldom, induce these lateral displacements; one of the lateral halves of the cervix being perhaps longer or more slender than the other, and thus more disposed to yield to pressure. In an unmarried person, also, a prominent posterior lip of the os uteri may predispose to retroversion or retroflexion; and *vice versa*.

The symptoms of these displacements are not well marked, as they produce no decided suffering. Hence they are generally discovered on making a vaginal examination for another purpose, their existence not having been previously suspected. The malposition of the cervix is, however, at once detected, *per vaginam*, whether anterior, posterior, or lateral. The only difficulty will be found in deciding between versions or flexions of the neck merely, and those of the body of the uterus upon the neck, of which I have spoken in the two preceding lectures. If there be any doubt, however, the uterine sound will at once remove it.

The treatment, therefore, of these displacements, is generally a matter of slight importance. If they are the consequences of another path-

ological condition, however, as hypertrophy or prolapsus, they may spontaneously recover, on the removal of these conditions. In one respect, however, these malpositions may require treatment on their own account; I mean from the fact that they may become the cause of sterility. If the latter condition exist, and the displacement of the cervix persists, although the descent or the hypertrophy, or other producing cause has been removed, we may introduce an instrument through the canal of the cervix like the one described in the preceding Lecture, (Fig. 11, p. 284,) but with a stem one-half or three-fourths of an inch shorter, and let the patient wear it for a few weeks. Or we may dilate the canal of the cervix by the use of the spongetent, or of the hysterotome, as first advised by Dr. Simpson in case of contraction of the cervical canal. Dr. Meigs here, also, recommends a globe pessary. I should apprehend it would rather increase the difficulty.

In connection with these displacements, I may allude to extroversion, or eversion, of the os uteri, of which Madame Boivin gives an instance. The rugæ of the everted os may be mistaken for ulceration surrounding the os, were we not aware that this condition may occur. It, however, rarely, if ever, requires treatment.

Inversion of the Uterus.

In this displacement, the uterus is turned inside out; so that the fundus passes downward through the os uteri. There may, however, be different degrees of this displacement; though for practical purposes it may be sufficient to recognize only complete and partial inversion. Of course there can be but one degree of complete inversion. Mr. Newnham admits two degrees of partial inversion, and which he terms depression and partial inversion. Mr. Crosse* admits three degrees of partial inversion, viz., depression, introversion, and perversion. Depression, the slightest degree of inversion, implies that the fundus uteri, in its entire thickness, has become convex towards the cavity of the uterus, or indented above; in introversion the fundus has become depressed into the cavity of the uterus, so as to be received by the latter; while in perversion, the fundus projects through the os tincæ. Mad. Boivin and Dugès admit three degrees of partial inversion, viz.: depression, introversion and perversion; and inversion of the body and cervix, *i. e.*, all except the os uteri. In *complete* inversion, the uterus is turned completely inside out; its lining membrane now covering it ex-

* An Essay, Literary and Practical, on Inversio Uteri. London, 1845.

ternally, while the peritoneum formerly covering it, becomes the lining membrane of a new cavity continuous with the peritoneal cavity above; and which is occupied by the ovaries and Fallopian tubes, and possibly also some portion of the small intestine. (Figs. 12 and 13.) In some cases the os uteri alone still remains in place, (*i. e.*, uninverted,) presenting a firm ring around the upper part of the tumor. The vagina is often, but not always completely inverted, when the uterus is so.

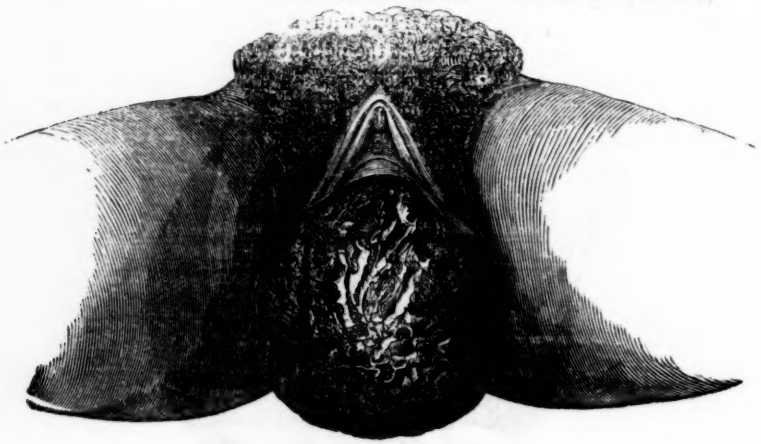

Fig. 12.

Complete recent inversion of the uterus. Here the vagina is not inverted.

The following tabular arrangement presents the degrees I have mentioned of partial inversion:

	Newnham.	Crosse.	Boivin.
Partial Inversion.	1. Depression. 2. Partial Inversion.	1. Depression. 2. Introversion. 3. Perversion.	1. Depression. 2. Second Degree. 3. Body and Cervix inverted.

Inversion of the uterus generally occurs immediately after the fœtus is expelled from the uterus, whether parturition occur at term or prematurely; and most frequently while the placenta still adheres to its surface. The earliest period of gestation, at which I remember it to have occurred, is at the end of the fourth month.*

* See, also, a case reported by Dr. E. W. Woodson in the *American Journal of Medical Sciences*, for October, 1860, p. 411.

Inversion has, however, been known to occur a few hours, and even days, after parturition at full term; depression having been probably produced at the time of, or soon after, the expulsion of the fœtus, and the other degrees having been gradually induced afterwards. In a case reported by Sabatier this accident occurred ten days; and in one reported by Baudelocque, it occurred thirteen days, after parturition. In the latter case depression at least was probably produced on the third day, by the patient rising from her bed.

Fig. 13.

Complete inversio uteri—lateral view. A loop of intestine is seen in the cavity formed by the inverted organ.

But may not a non-gravid uterus also become inverted? Some writers think not. I should, however, not hesitate to decide with those who believe that a uterine polypus attached to the fundus uteri may also gradually produce this displacement. In practice, therefore, we have three classes of cases; and which I shall consider in the following order:

1. Those which have just occurred—recent inversion.

2. Chronic inversion; cases which occurred in connection with parturition some considerable time since—inversion of long standing.

3. Inversion produced by a polypus or other intra-uterine tumor.

I. RECENT INVERSION OF THE UTERUS.

By *recent* inversion, I mean those cases to which we may be called any time within the first few days after the inversion occurs—it still remaining unreduced. Mr. Radford terms these cases of *acute* inversion.* As we have seen that this accident may occur any time within ten or even thirteen days after parturition, I find some excuse for limiting recent cases to two weeks' duration, though this is merely an arbitrary limit. If the case has existed much longer than this, the symptoms change and the case becomes one of chronic inversion, as Dr. Radford terms it; though I prefer the expression—inversion of long standing.

Causes of Inversion, connected with Parturition.—The *predisposing* causes are, a previous inversion after labor; a constitutional predisposition to laxity of muscular fibre, (Meissner;) atony of the uterus in connection with a large pelvis, (Siebold;) complete atony of the uterus immediately after the expulsion of the fœtus; a polypus attached to the fundus uteri; and preternatural shortness of the umbilical cord, or its arrangement in coils around the neck of the fœtus. Very seldom, however, has this cause any decided influence;† and the cord is often ruptured by traction without producing inversion.

The following *direct* causes may be mentioned: A very prompt delivery, (implying powerful contractions of the uterus,) especially if it occur while the patient is standing or rising from stool; rash pressure downward of the fundus uteri by the hand applied over the hypogastrium; powerful straining efforts of the patient after the fœtus is expelled; and all causes of irregular uterine contraction. But, doubtless, the most common cause is careless traction upon the cord. in order to remove the placenta after the fœtus is expelled.‡ Still, it should be added, that inversion may occur under the most judicious management. If the uterus be in a state of atony for a time after the fœtus is expelled, we may easily conceive that if an irregular contraction should take place, it might cause a depression of the fundus at first; and this may finally become a complete inversion, independently of any error on the part of the practitioner. Henkel thinks that violent after-pains may produce inversion, which is only another method of expressing the same hypothesis. Spontaneous inversion, so

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* Dublin Journal. September and November, 1837.

† Though the cord may be but six to eight inches long, inversion very seldom results.

‡ This was the *known* cause in 46 cases out of 148 compiled by Dr. C. A. Lee, in *American Journal of Med. Sciences*, Oct., 1860, p. 344.

called, is often, however, the final result of some improper manipulations at the time of delivery, as we have already seen.*

Symptoms of Recent Inversion.—If the inversion be *complete*, the following grave, rational signs present themselves. The patient suddenly becomes exhausted and deadly pale, even though there be no hæmorrhage. Generally, however, but not always, profuse flooding occurs, provided the placenta is detached. It is, however, far more frequently attached when the uterus is inverted. The pulse becomes small and rapid, and the voice weak, and nausea and vomiting usually supervene. If hæmorrhage attends, syncope soon follows, and in some cases, death ensues almost immediately. On the other hand, if the patient rallies, she does so almost as slowly if there has not, as if there has been hæmorrhage; the shock to the nervous system being the main source of immediate danger. Violent uterine contractions accompany, and also sometimes succeed, the displacement.

Such symptoms should at once induce you to make a thorough local examination. A large tumor will be found hanging from the vulva, larger than the contracted womb should be;† at first, flaccid, and sometimes extending half way to the knees; but anon, becoming rigid, from the supervention of contractions. This is the completely inverted uterus. If the vagina is also completely inverted, (as it usually is not,) there will be a firm constriction towards the top of the mass, (the os uteri,) and the portion above this is the inverted vagina. The cavity formed by the inverted uterus, and which is, of course, continuous with the peritoneal cavity, contains the ovaries and Fallopian tubes in all cases, and sometimes, also, portions of the small intestines, of the bladder, and the rectum. Thus, the size of the tumor will vary much, according as it does or does not contain the latter viscera. It is of course larger also, if the *placenta* is still attached.

On inspecting the protruded mass, it presents a rough, fungous-looking, bleeding surface, (if the placenta is detached,) and we can distinguish the orifices of the uterine sinuses. The mass is spheroidal or ovoid, and larger above than below, and is sensitive to the touch; and should, of course, be at once recognized if the placenta is still attached. On attempting to examine *per vaginam*, the latter may be found to be completely inverted. If not, the finger passes only a short distance into that canal, and can be carried completely around the upper

* Twenty-three cases of spontaneous inversion occurred in one hundred and forty-eight cases reported by Dr. C. A. Lee, *ut supra*, p. 345.

† Ruysch made a drawing of an inverted uterus which was six inches in all its diameters.

end of the tumor without finding the os uteri. Examining *per rectum*, also, the uterus is not found in its place. And finally, search being made for it by palpation over the hypogastrium, it is thus found to be absent from the position it should occupy immediately after parturition.

If the inversion be *partial*, the rational symptoms will be less pronounced proportionally to the degree of the displacement, and some of them will be entirely wanting. If mere depression exists, we may merely recognize a cup-shaped depression in the fundus on applying the hand to the hypogastrium. In introversion, this would be still more marked. In perversion, the fundus might not be reached at all by this manipulation, and there would be graver accompanying symptoms. But a vaginal examination would discover the fundus projecting more or less through the os, into the vagina, it being encircled as by a firm ring, by the os above. But even if the whole uterus except the os be inverted, the tumor may still be so small as to be retained in the vagina, since, unless there be complete inversion, nothing but the ovaries and Fallopian tubes, and not the whole of these, is contained in the cavity formed by the inverted organ; and in this case, the tumor in the vagina has been mistaken for the breech of a second child.

In regard to the comparative frequency of complete and partial inversion, I should add that most writers regard the former as comparatively quite rare. It is my own opinion, that of those cases occurring at once after the fœtus is expelled, the greater number are cases of complete inversion; while those occurring subsequently, are mostly cases of partial inversion.*

Prognosis of Recent Inversion.—Inversion is a fearful accident, unless treated at once, and the uterus reposited. But if judiciously and promptly treated, it is not usually fatal. There is, however, danger of a relapse for several days after, even to the 10th, (Leblanc;) and after a subsequent delivery. If overlooked or maltreated, it may prove suddenly fatal, (in one or two hours,) or death may occur a few days subsequently, from pain and exhaustion, syncope, or convulsions.

On the other hand, if the patient survives an unreduced inversion for two or three weeks, she may probably for months or years, though still a great sufferer. Repeated and almost unintermitting hæmorrhage, however, generally limits the life of the patient to two or three

* Of 126 cases, 108 were complete. Dr. C. A. Lee, *ut sup.*, p. 345. But Dr. Lee also includes the third degree of partial inversion of Mad. Boivin, (p. 324,) under the head of complete inversion.

years after the accident, (Boivin and Dugès, p. 123.) Some, however, after a few months or years, experience but comparatively little inconvenience from this accident. At the end of from three to six months, the uterus will have been reduced to nearly its normal size, and will frequently no longer protrude from the vulva; and if not, life is prolonged with much less discomfort. Levret and Delamotte were consulted by patients who had had inversion of the uterus twenty and thirty years, respectively. And Levret mentions the case of a woman seventy years of age, who had a complete inversion of the womb and vagina, and, of course, the mass was entirely external—which contained a portion of the rectum, of the bladder, and of the small intestine, besides the ovaries and Fallopian tubes.

Complications of Recent Inversion.—Distention of the bladder and subsequent inflammation may be expected, if not guarded against, as complications. Sometimes, also, the uterus, if unreduced, becomes strangulated, and finally sloughs off; and in a few instances, the patient has survived even this result. Inflammation soon supervenes of the displaced organ in all cases; and this must, in cases where treatment has been delayed for a short time, be removed before reposition is attempted.

Diagnosis of Recent Inversion.—It might be supposed that the diagnosis of recent inversion, when complete, presents no difficulty; but it has, in practice, often been found otherwise. The sooner after the accident occurs, however, the easier the diagnosis.

1. From a *polypus*, complete recent inversion is distinguished by its rough, bleeding, and sensitive surface, and its form, (larger above than below,*) and the greater immobility of the tumor. In polypus also the os encircles the tumor; not so in inversion when complete.

2. From *prolapsus*, inversion is distinguished by the absence of the mouth of the uterus at the lower part of the tumor, as well as by the blood-red and bleeding surface presented.

3. From *prolapsus of the vagina*, by its rough bloody surface, and firmness, and difficulty of reduction.

The history of the case in either prolapsus or polypus will also, of course, be inconsistent with the idea of recent inversion. Moreover, the absence of the uterus from its normal position in the hypogastrium, and the placenta also, if attached, will distinguish inversion from all the preceding; and in polypus and prolapse of the vagina, the finger may be passed above the tumor into the vagina.

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* Very rarely, however, the upper end of the tumor is the smaller in inversion.

Partial recent inversion (in the third degree, or perversion,) may be mistaken for (1) polypus. But here, again, the tumor is sensitive, while polypus is not; the surface is rough and bleeding—that of polypus is polished and smooth. Sometimes, however, the inverted uterus, whatever the degree of inversion, is not decidedly sensitive. (2.) It may also be mistaken for *prolapsus;* but here, again, the surface of the latter is smooth, and the os uteri at the lower extremity of the tumor.

The diagnosis of the first degree of recent inversion (depression and introversion) is made out especially by searching for the fundus uteri by palpation of the abdomen above the pubes.

Treatment of Recent Inversion.—Evidently the first thing to be done in a case of recent inversion, whether complete or partial, is to return the uterus to its normal position as promptly as possible. A delay of a few minutes may be fatal to the patient, and the difficulty of reposition is also much enhanced as the time passes. Denman thought the lapse of four or five hours might render the reposition impossible. This is, however, a mistake, as will appear further on.

If present, therefore, when the displacement occurs, we should not lose a minute before attempting to restore the uterus to its normal position. There is, however, an important practical question to be settled in each case, provided the placenta is still adherent, (and it is so in a majority of cases,) viz.: Shall the placenta be detached before the attempt is made to reposit the womb?

Blundell, Burns, Clark, Carus, Denman, Gooch, Newnham, and others are opposed to the removal of the placenta before attempting the reduction; though Denman and Carus advise to complete the detachment, if it be already partially detached.* On the other hand, Baudelocque, Boivin, Capuron, Gardien, Radford, Meigs and others, advise previously to detach the placenta. Obviously the reduction will be greatly facilitated by its previous removal, and in this way we also avoid any trouble from it subsequently to the reposition; but those who would return it with the uterus are deterred from detaching it by the risk of hæmorrhage. Dr. Radford has, however, shown that this risk has been overestimated. Avoiding all discussion, I should say, that our practice, in case the placenta is still adherent, may be safely based on the three following precepts:

1. If the placenta is partially detached, complete the detachment before attempting the reposition.

2. If the placenta is adherent, and you are present at the moment

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*Churchill's Diseases of Women, p. 282.

when the inversion occurs, attempt to replace the uterus at once, without detaching the placenta. You would generally succeed at once, and the placenta will be expelled by the uterine contractions afterwards.

3. If not called till an hour or more has elapsed, or until the uterus has become rigid, detach the placenta before attempting to replace the womb.

To effect the reposition, the patient should be placed on the back, with the pelvis higher than the shoulders; and if the uterus has become rigid, it will be necessary to administer an anæsthetic. In case of a few hours' delay, the bladder and rectum should also be previously evacuated. In respect to the manipulations to be resorted to, different directions are given by different writers. But first apply oil or glycerine to the hands. Mr. Newnham advises to attempt to replace first the portion of the mass which last descended, and therefore to commence at the upper part of the tumor. Some advise to compress the whole mass between the two hands, to diminish its size, and then to force the mass upward, and thus effect reposition. I should compress the tumor in this way only in case it contained portions of intestine, and for the purpose of forcing them back into the peritoneal cavity before reposition is attempted.

I should endorse the practice of those who first apply the end of a single finger to the lower extremity of the tumor with the intention of indenting it like the bottom of a bottle, by forcing it upward, and then other fingers, and finally, the whole hand, when the indentation becomes sufficient to receive the latter. It will generally require a firm, continuous pressure, for several minutes before the lower part of the tumor yields at all; and when at length it does so, and the whole hand is applied in its turn, we must expect to meet with resistance again, when the inverted fundus is raised to the level of, and before it is returned through the os. A steady pressure will, however, at last overcome this, and the uterus is then at once replaced; the fundus sometimes starting from the hand, at last, like an elastic bottle when turned wrong side out. The hand must, however, (now within the uterus,) be carried as high as possible, to make it certain that no depression of the fundus remains. It should also be retained in the cavity of the uterus until expelled by the contractions of the latter; since otherwise, the first contractions may reproduce the inversion.

We must, however, know when to attempt this manipulation. And Dr. Meigs has decided this point. He observed that afterpains (*i. e.*, contractions,) occur in the inverted uterus, as after parturition under normal circumstances. During them, of course,

the uterus becomes rigid and firm, but the contraction ceasing, it again becomes flaccid. It is only when in the flaccid condition, of course, that we are to attempt the manipulation just described. If we find the uterus rigid, therefore, we have only to wait until relaxation ensues.

Since, however, continued pressure with the finger becomes at length quite fatiguing and painful, we may use with the same result a piece of cork an inch in diameter, (a cork stopper, for instance,) made convex at its extremity and attached to a piece of whalebone or wood of sufficient firmness, instead of the finger; and when the tumor becomes indented below by the pressure thus applied, the hand can be used in turn.

If reduction is found to be impossible by the preceding process, and the principal resistance is afforded by the os uteri, it may be proper to divide the latter. Belladonna ointment may be previously applied, as recommended by Chaussier. If the uterus is inflamed when we first see the case, the inflamation should be diminished by bleeding, the application of leeches, &c., as may be required, before attempting the reduction.

If all the preceding means fail, I should still be disposed to vary and repeat the procedure, since I think that but very few cases of recent inversion should be abandoned as irreducible. A few cases of partial, recent inversion have been spontaneously reduced; but we have no right to expect this termination in any given case.

After the reduction has been effected, a recurrence of the accident is best prevented by keeping the patient longer than usual, after confinement, in a recumbent position. I have said nothing of brandy and ammonia, or other stimulants which the patient may require, according to her condition, before commencing or during the reduction.

II. Inversion of Long Standing.

Under this head I include those cases of inversion of the uterus which have been either overlooked at the time of their occurrence, or at any rate, have remained for several weeks or months unreduced. In order to specify a definite period, I have restricted recent inversion to within two weeks after its occurrence; and accordingly, any case of longer duration than this is included under the present head. Neglected cases have, however, generally existed for several months, or even years, before we are consulted in regard to them; the uterus meantime having returned to nearly its original size; and such cases will be kept more especially in mind in what I have to say in this connection.

The *causes* of long-standing inversion are, of course, the same as of

the recent accident, (p. 326,) the latter becoming the former. The gradual dragging of a uterine tumor may, however, also be a cause of the former.

Signs of Inversion of Long Standing.—The signs of recent *complete* inversion (p. 327) merge gradually into those of the chronic cases. But after some months, even, the hæmorrhage may continue as a constant menorrhagia; or a profuse, constant mucous discharge may replace it. Subsequently, the epithelium may become dry from constant exposure to the air; or the surface of the tumor may become covered with ulcerations. Once a month, however, in either case, the surface becomes for a few days covered with blood—*i. e.*, the catamenial fluid—except in those who have ceased to menstruate. But this class of patients, since they avoid the monthly congestion of the uterus, generally have the organ become smaller and permanently dry on its surface, and less sensitive, and may at last suffer very little from the displacement. Irritation of the bladder and constipation are also constant symptoms of this condition. Constitutional symptoms soon supervene in most cases; and anæmia, hectic, and often dropsical effusions, hasten the fatal result. Some maintain that the average duration of a complete inversion, before producing fatal effects, is from two to three years, though there are many exceptions to this proposition, (p. 329.)

On making a *vaginal* examination, if the inversion be complete, we find a tumor sometimes projecting from the vulva, and sometimes contained within the vagina, of an ovoid form, about the size of a hen's egg, or larger, somewhat sensitive, generally rough, but sometimes smooth, sometimes moist, and at others dry, and its surface surrounded at its upper extremity by a mere *cul-de-sac* of the vagina. It may possibly be mistaken for other conditions, however; and which will be discriminated under the head of the diagnosis.

If the inversion of long standing be only *partial*, the preceding signs will be less marked in proportion to the degree of displacement; and from the first two degrees very little inconvenience is at last usually felt.

Prognosis of Chronic Inversion.—I have nothing here to add to what I have said under this head on page 328.

I should, however, not omit to state the opinion of some eminent authorities, that inversion of long standing is sometimes spontaneously reduced. Dr. Meigs mentions two cases of this kind, in one of which reposition occurred after eight months, and in the other after eight

years.* I have no doubt that cases of partial inversion of long standing (of depression, introversion, and possibly also of perversion,) have after a long duration been spontaneously reduced. But from the proposition that a complete inversion can be thus remedied, I must withhold my belief. I can form no conception as to where the nisus could first be brought to bear upon the displaced organ. But if any part, even the os alone, remain uninverted, I can conceive of the possibility of a very gradual, but finally complete, reposition.

Of the complications of long-standing inversion also, I have nothing to add to my former remarks, page 329.

Diagnosis of Chronic Inversion.—This is a subject of the utmost practical importance, and many mistakes have resulted from the want of a precise knowledge of it.

From both *prolapsus* and *polypus uteri*, and from *prolapsus vaginæ*, chronic inversion is distinguished by the oozing of blood once a month (except in those who have ceased to menstruate) upon the surface of the latter. It is also usually sensitive, unlike polypus, and has not the os uteri at its lower extremity like prolapsus. In size it seldom exceeds the large extremity of a hen's egg, while polypus is of indefinite dimensions. From prolapsus of the vagina it is also distinguished by its greater firmness, and its difficulty of reduction, which latter also again distinguishes it from prolapsus uteri.

Examining *per vaginam* in prolapsus uteri, we feel the os at the lower part of the tumor; in polypus we feel the os encircling the latter; in complete inversion the finger reaches only the cul-de-sac of the vagina at the upper end of the tumor. In the two first the tumor is smooth; in the last it is rougher. In prolapsus vaginæ the finger at once isolates the tumor from all connection with the uterus itself.

In case of *partial* inversion, especially perversion, the diagnosis may be very difficult. If, however, a catheter being passed into the patient's bladder, and an index finger in the rectum, the finger can be made to feel the catheter, through the walls of the rectum and the bladder —the body of the uterus does not of course intervene between these organs, and either complete inversion or perversion exists.

The distinction between introversion (or perversion) and polypus uteri is sometimes at once made by the use of the uterine sound. In the latter it passes on one side of the tumor only to the normal distance into the uterine cavity; in the former it passes to an equal, but too slight a distance on all sides of the tumor. The history of the case

* Woman and her Diseases, pp. 253–4.

will also generally lead to a safe practical inference on this point. The attachment also to the uterine cavity of a polypus is usually slender; while in introversion or perversion the upper part of the tumor is broad.

Treatment of Inversion of Long Standing.—Some writers regard a chronic inversion as irreducible from the very nature of the case, and therefore merely attempt to palliate the symptoms by rest, the use of styptics, vaginal injections, &c., as the circumstances may require; also returning the uterus (if protruding externally) into the vagina, and retaining it there by means of a T bandage. Dr. Meigs, though admitting that inversion is sometimes spontaneously reduced, (as we have seen, p. 334,) regards reposition as impossible by any operative interference,* and advises merely to have patience, and hope for the best † But I think a more encouraging view may be taken of this class of cases. Mr. Gurney reports a case of reposition at the end of five months; Mad. Boivin of fifteen months; and Mr. Valentine of sixteen months.‡ Dr. Tyler Smith, of London, reposited a uterus which had been inverted twelve years even; and Prof. White, of Buffalo, succeeded in a case of sixteen years' duration.

We are therefore not to regard a case of inversion as irreducible, simply because it has existed for several months or years. The first question therefore is, whether an attempt shall be made to reduce the organ or not.

Without delaying to specify all the circumstances in which reduction should not be attempted, the fact of the patient having ceased to menstruate, or that she suffers but little inconvenience from the displacement, might naturally induce us to hesitate. But on the other hand, if she has not passed the child-bearing period, and has no inflammation, or other complication, and is constantly a great sufferer, I should say the presumption is, that the attempt to replace the uterus is justifiable.

The operation of reduction is essentially the same as before explained for recent inversion, (p. 331,) except that here time can always be taken to make every preparation for the reduction; and an anæsthetic should, of course, be administered previously. The patient is to be placed in the same position as before specified; and pressure is to be made for a long time at the bottom of the tumor, with the finger, or a proper instrument. If the first attempt fails also, it should be repeated at another time. It may be proper to keep up the pressure for hours; pressure being also at the same time applied deeply

* Page 246. † Page 250. ‡ Churchill, p. 384.

over the hypogastrium, to prevent the mass, as a whole, from being carried upward. And after the reduction, should it be effected, rest, and the appropriate treatment to prevent inflammation, should be resorted to.

But if, after repeated attempts, or for any other reasons, we feel obliged to regard the case as irreducible, the question next presents itself, of removal of the inverted organ; and this is accomplished by ligature or excision.

From the fact that the patient may recover when the uterus becomes strangulated, and sloughs off in cases of inversion, we should infer that its removal by the surgeon might not prove fatal. We should, however, suppose it would be a safer practice in those who have ceased to menstruate, and this is also a fact to be taken into consideration. But it has often been successfully performed on younger patients. Churchill alone gives the names of nearly thirty practitioners who have successfully performed it.* Mad. Boivin, however, with some other writers, has doubts on this subject, and shows that in many successful cases it was a hollow polypus, and not the womb, that was successfully removed.† But the presence of the ovaries in the part removed, in many cases, leaves no doubt of the success in many instances of the operation in question.

The inverted uterus is best removed by ligature, and sometimes by excision; or the mass may be removed by excision immediately after the ligature is applied. The ligature may be of silver wire, or a thread of silk or linen. I should prefer a thread to the wire, since the former aids the process of ulceration, and thus the mass becomes sooner detached. The ligature should be passed double through the centre of the base of the tumor, and one of its portions should be tied round each half of the latter. Intense pain, nausea and vomiting, and nervous shock usually follow the tightening of the ligature; and if the symptoms become too intense, it should be loosened for a few hours, and then tightened again. Opiates, in decided doses, and stimulants will be required to support the patient's strength until the mass has separated.

III. Inversion of the Uterus from Polypus.

Lastly, we have to consider inversion gradually induced by polypus uteri. Some reject the idea that polypus can produce inversion of the womb, and assert that in the cases in which this was believed to be the fact, the inversion actually occurred in connection with parturition,

* Diseases of Women, p. 385. † Boivin and Dugès, p. 130.

the polypus also existing at that time; and remind us of the case of Levret, in which it was entirely overlooked for five years after its occurrence. It is, however, safe to assume, with Meigs and other writers, that a distended and softened condition of the uterus is always requisite to the occurrence of inversion, and therefore the polypus must be of considerable dimensions before it can produce this effect. Of the possibility, however, of such a result, entirely independent of parturition, there should no longer be any doubt. Churchill has given the particulars of one case, and referred to three others, in his work on the Diseases of Women.* The polypus being attached to the fundus, produces at first mere depression, then introversion, and perversion after descending through the os uteri.

The rational *signs* of inversion produced in this way are essentially the same as those of inversion of long standing, mentioned on page 333. The inversion may also be either complete or partial. The main difficulty on inspection, or on making a vaginal examination, will be to distinguish the real nature of the case from the other conditions mentioned under the next head. The prognosis is also essentially the same as indicated on pages 328 and 334.

Diagnosis of Inversion from Uterine Polypus.—As we here have *inversion with the polypus*, the main difficulty will be found in distinguishing this condition from mere inversion, and from polypus merely. I shall therefore confine my remarks to these points, and refer for the diagnostic symptoms of simple inversion to page 334.

In the present class of cases the displaced mass, of course, consists of two portions—1, the polypus; and 2, more or less of the uterus. There is generally a constriction between the polypus and the uterus; but at any rate the polypus is not sensitive under pressure, while the uterus is almost invariably so. The polypus is also, in these cases, of considerable size; so that the whole mass is much larger than the inverted uterus alone can be in cases of chronic inversion. The attachment of the tumor to the uterus is usually broad.

But on the other hand, the case may be mistaken for polypus merely. This is prevented by passing the uterine sound up to and into the os uteri. If the inversion is complete, of course no os uteri is to be found; if partial, the sound passes to an equal, but too slight a distance on all sides. Besides, if the catheter be passed into the bladder and the finger into the rectum, as stated on p. 334, the uterus will, in case of inversion, be found not to be in its place.

* Philadelphia Edition, p. 375.

Treatment of Inversion from Polypus.—The polypus should first be removed by ligature, or by excision, as may be deemed best. I should generally prefer the latter. Then an attempt may be made to reduce the inverted organ; for it is quite too much to expect that it will return spontaneously, as asserted by Dr. Meigs, in any specified time. Failing in this, the question of removol of the uterus arises. But since the treatment of this class of cases, after the polypus is removed, is identical with that of the cases of long standing, which have been considered, I shall refer to what I have said on page 335; and in closing my remarks on this subject, I conclude what I had intended to say upon the several displacements of the uterus.

The Physiology of the Circulation. A Course of Lectures delivered in the College of Physicians and Surgeons, New York, in the Fall Term of 1859. By JOHN C. DALTON, JR., M.D., Professor of Physiology and Microscopic Anatomy.

LECTURE XI.

(OCTOBER 8.)

Color of the Blood—Difference between Arterial and Venous—Distribution of these two kinds—Arterialization of Blood in the Adult—In the Fœtus—Difference in Color of Blood in the Fœtus—Change of Color of Blood by Oxygen—Experiment—Conditions of this Change in the Lungs—Experiment—Changes of Color in Blood in Capillaries—Red Color of Venous Blood—In Renal Veins—In Submaxillary Veins—Variation in regard to Functional Activity of Organ—Influence of Nervous System on Color of the Blood—Chorda Tympani—Great Sympathetic—Reason of this Variation in Glandular Organs—In Muscles—Color of Blood in Uterine Veins—In Pregnancy—Explanation.

I have already spoken, gentlemen, in a previous lecture, of some of the variations in constitution which the blood undergoes in different parts of the circulation. We have seen that its different ingredients are in this way constantly becoming altered, increased or diminished in quantity, or altogether replaced by new substances, as the circulating fluid passes through the various glandular and excretory organs. These changes constitute, together, the great double phenomenon of nutrition; the nutrition of the blood on the one hand, and the nutrition of the tissues on the other.

But there is one particular in which this variation of the blood in different parts is more marked and palpable than in any other. I mean, in regard to its *color*. The most cursory examination shows

that there exist in the living body two very distinct and dissimilar kinds of blood, easily distinguished by their physical appearance, viz., venous and arterial; the venous blood, dark and purplish in hue, the arterial of a bright scarlet color. These two kinds of blood are contained, as we know, in two different sets of vessels, the veins and the arteries; and the difference between them is so striking and so constant that the ancients regarded them as entirely distinct, in their nature, their course, and their destination.

But we now know that these two kinds of blood, notwithstanding their peculiarities of hue, are in reality one and the same. It is the same blood, which in one part of the circulatory system is red, and in another part blue. And we shall find that its alteration, from blue to red in the lungs, and from red to blue in the general capillaries, is of a similar nature with the other changes of constitution which we have studied already.

We have, then, blue or venous blood in the veins, and red or arterial blood in the arteries; and the point in the circulatory system, at which the blood is changed from blue to red, is the lung. As the blood loses its fibrin and is drained of urea in the kidneys, so in the lungs, as we know, it absorbs oxygen and exhales carbonic acid. But in the kidneys, the *chemical* change in the constitution of the circulating fluid is the only one observable; while in the lungs, a remarkable *physical* alteration is superadded to the chemical one, and the blood which entered the pulmonary capillaries blue, leaves them of a brilliant red.

So far, these facts regarding the circulation of the venous and arterial blood are perfectly well known. It has long been a well-established fact, that in the living body the lungs stand as a barrier between the two different kinds of the circulating fluid; so that on one side of them the blood in the vessels should be blue, and on the other, red; an entire conversion or transformation of the circulating fluid taking place in the pulmonary capillaries.

But it has been sometimes stated, and by observers of considerable eminence, that this condition does not exist before birth. It has been thought that the arterialization of the blood, which is so palpable a fact in all the warm-blooded animals, in adult life, is not necessary during the fœtal condition, but that then, before respiration has commenced, there can be no alterialization of the blood, and that the circulating fluid is then of the same color in all parts of the body.

Now, this opinion is an erroneous one. It is true, that before birth, there is no respiration by the lungs, and no arterialization of the blood in

those organs. But, at this time, while the lungs are inactive, the fœtus has another organ which, to a certain extent, replaces them, and performs their function, viz., the placenta. For, as in the adult, the blood is sent to the lungs for renovation and purification, so in the fœtus, it is sent to the placenta. Therefore, if any true arterialization of the blood take place in the fœtus, it must be accomplished, not in pulmonary, but in the placental vessels; and as, in the adult, we find blood of two different colors in the pulmonary artery and the pulmonary veins, so in the fœtus we must look for this difference in color, if any exist, in the blood of the umbilical arteries and the umbilical veins.

I have had several opportunities of verifying this point in the fœtuses of carnivorous animals. The mode adopted was, to take an animal (dog or cat) well advanced in pregnancy, produce insensibility by the administration of ether, and open the abdomen. In these animals, the placenta is in the form of a broad belt, which runs round the middle portion of the membranes like a zone, and at this part the chorion is closely united to the mucous membrane of the uterus. But at the extremities of the ovum, the membranes are quite loose and detached, and but slightly vascular, so that they can be cut open without producing any perceptible hæmorrhage. After the animal is prepared, therefore, as I have just said, the walls of the uterus may be divided so as not to wound the placenta, but only to expose the thin and detached portion of the membranes. These membranes are then divided, and the fœtus exposed to view, with the umbilical cord and its vessels still attached to the placenta and the inner surface of the uterus.

Of course, as the animal is only etherized, the circulation, all this time, continues to go on, both in the vessels of the uterus and in those of the embryo.

Now, in these cases I have found that there is a difference in color between the blood going to the placenta through the umbilical arteries and that returning from it by the umbilical veins.

The following experiment will show the nature and extent of this difference:

Experiment, April 19th, 1859.—The uterus of a cat, nearly arrived at the term of pregnancy, was opened while the animal was in a state of etherization. The decidua reflexa and allantois of one of the ova were also opened, allowing the fœtus, perfectly alive, to slip out, still covered by the transparent amnion—the attachments of the cord and placenta still remaining entire. The difference in color between the umbilical arteries and veins was very distinct. They were both dark, but

the color of the veins was very decidedly more ruddy than that of the arteries; *i. e.*, the blood in the umbilical arteries was of the color of the ordinary venous blood, while that of the umbilical veins had a color midway between the ordinary venous and arterial hues. All the fœtuses were healthy, and moved briskly after being taken out of the uterus.

It thus appears that the arterialization of the blood takes place in the fœtus as well as in the adult, but that in these two cases the function is accomplished by two different organs: in the adult by the lungs, and in the fœtus by the placenta. Furthermore, in the fœtus this function is much less active than in the adult; for while in the adult the difference in color between the venous and arterial blood is complete, in the fœtus it is only partial.

Undoubtedly, also, the arterialization of the blood is much less active at an early period of embryonic life than at a later one; and if we were to examine the two kinds of blood in a very young fœtus, we should hardly be able to perceive any difference between them.

But in the adult condition the change of color in the blood, while passing through the lungs, is its most marked and striking alteration. Now we know that this change in color takes place at the same time that the blood absorbs oxygen from the atmospheric air. The absorption of oxygen in an artificial way may also be shown to have the same effect on the color of the blood. Here is some venous blood of the ox, which has been defibrinated for the purpose of keeping it in a fluid condition. It is, as you see, of the ordinary dark purplish color of venous blood. If I pour some of it, however, into this bottle of oxygen, and shake up the two together, the color changes in a few seconds, and becomes a bright scarlet hue, like that of arterial blood.

But in the lungs the change of color is produced, as you know, not by contact of the blood with pure oxygen, but with the atmospheric air contained in the pulmonary vesicles and ultimate bronchial tubes. This atmospheric air, even, is already somewhat impure when it arrives in the deeper parts of the lung; since it has already lost some of its oxygen, and absorbed some carbonic acid, by contact with the mucous membrane of the trachea and bronchial tubes. We might suppose, therefore, that the change in color of the blood would be less prompt and complete in the lungs than when the blood is mixed artificially with pure oxygen.

But on the contrary, the blood is affected, if anything, more quickly in its passage through the lungs than in an artificial mixture with oxygen. This is owing to two facts: First, the structure of the lungs is

such, and the subdivision of the bronchial tubes and the air-vesicles so minute, that the blood is disseminated over a very large vascular surface, and is more intimately mingled, therefore, with the air in the lungs, than we can possibly mix it by agitating with oxygen gas in a bottle. In the second place, we must remember that, after all, the blood in the lungs does not absorb its oxygen directly from the air in pulmonary passages, but from the lining membrane of these passages itself. Here, then, we have a phenomenon of endosmosis; and we have already seen how promptly and instantaneously this process is accomplished, when the absorbing surface is as extensive as that of the lungs.

We can see, therefore, that with atmospheric air in the lungs the blood will be affected as rapidly as with pure oxygen in a bottle.

Here, for example, is a pair of lungs which have been recently removed from the dog, with the pulmonary vessels still attached. The nozzle of a syringe has been fastened into the commencement of the pulmonary artery, through which to inject blood into the vessels of the lungs; and a glass tube is attached to the termination of the pulmonary veins, through which the blood is conducted away, after its passage.

I now take some of this venous blood and inject it into the pulmonary artery; the lungs being, at the same time, inflated through the trachea. The change in color, you observe, is instantaneous; and the blood which passes into the lungs blue, comes out red.

Now this change of color in the lungs, from venous to arterial, is usually regarded as the most important alteration which it undergoes in the whole body. For if the arterialization of the blood be arrested, as we all know, life very soon comes to an end. But in reality, as Bernard has very justly remarked, the converse of this change is equally important. The blood must become altered from arterial to venous in the general capillaries, no less constantly than it is changed from venous to arterial in the vessels of the lungs. In fact, of the two changes, if there be any difference between them, that in the general capillaries is the most directly important and indispensable. For the processes of nutrition, which take place in the tissues, and in which the blood itself is changed from red to blue, are those by which life is immediately sustained; while the arterialization of the blood in the lungs is only a secondary one, by which the blood is renovated, and refitted with a supply of the necessary materials.

However, in the natural and healthy condition these two changes are complementary to each other, and go on simultaneously in the different parts of the circulation.

It has been found, however, of late years, that while all the blood

changes from blue to red in the lungs, it is by no means true that the whole of it is altered from red to blue in the general circulation. On the contrary, there are certain organs in which the blood does not assume the venous tinge, but *passes out of them with nearly the same color as before it entered their vessels.* This was first noticed to be the case with the *kidneys.* If the abdomen be opened, in the living animal, without disturbing the circulation, and the renal vessels exposed, it will be seen that the blood in the renal veins is very different in color from ordinary venous blood, and is much brighter and more ruddy in hue. Sometimes it is hardly to be distinguished in color from the blood in the renal arteries. Some care is necessary in doing this experiment, since if the movement of blood in the vena cava, or the renal veins, be in any way obstructed, a backward congestion of the kidney takes place, and its venous blood then becomes blue. But as soon as the regular course of the blood is re-established, it becomes red again in the renal capillaries and veins.

I have here, as you observe, a full-grown cat, which I will etherize and then proceed to open the abdomen. On turning back the abdominal parietes, and laying aside the small intestines, we readily expose the left kidney and its corresponding vessels. The left kidney is the better one for this purpose, since it lies lower in the abdomen, and can be more completely brought into view than the right. There is a curious difference, in this respect, between man and some of the lower animals. For while, in man, the right kidney is placed lower than the left, in these animals the left is placed lower than the right.

After stripping off the fat and areolar tissue which surround the renal vessels, they are seen here crossing the posterior wall of the abdomen, in a horizontal direction. The color of the veins, you observe, is very similar to that of the arteries; and this peculiarity becomes very striking when you compare the appearance of the renal vein with that of the vena cava just below it, or any of the lumbar veins in its neighborhood.

It has been noticed, however, that the red color of the blood in the renal veins is much more marked when the organ is in a state of activity, and while the urine is being freely excreted. Bernard has shown this by exposing the vessels of the kidney, and at the same time placing a small silver tube in the corresponding ureter. He found that while the urine dripped rapidly from the end of the tube, the color of the blood in the renal vein was red. But as soon as anything happened to check the functional activity of the organ, and the flow of urine was

arrested, the circulation in the renal vessels was at the same time changed, and the blood in the veins became blue.

Stripping off the capsule of the kidney is found to cause the same obstruction, and Bernard says that even opening the abdomen by a wide incision, and freely exposing the surface of the abdominal organs, is apt to produce a similar effect. He recommends, therefore, that, in order to get at the renal vessels, an incision should be made in the posterior part of the lumbar region, so that the vessels may be exposed from behind, without opening the general cavity of the abdomen.

Opening the peritoneum in front, however, does not always cause a suppression of the urine, nor produce a serious disturbance in the renal circulation; for I have often been able in this way to observe a very distinct arterial hue in the blood of the renal veins, and in this instance, also, you see it is quite perceptible.

We find, then, that the change in the color of the blood, from red to blue, is not a general, but a local phenomenon. It is caused by the particular action of the blood on the tissues of the individual organ, and by that of the tissues again upon the blood. Therefore, as the processes which go on in different organs are various in their character, we need not be surprised that their effect on the color of the blood which passes through them should be different. We already, then, have three distinct results effected, in regard to the color of the blood, in different parts of the body. In passing through the lungs, the color of the blood is converted into a bright red; in the muscular tissues, it is changed to blue; while in the kidneys it undergoes hardly any alteration at all. No doubt, the changes of composition, which the blood suffers in the kidneys, are of equal importance with those which it undergoes elsewhere; only these changes are not accompanied with any absolute alteration of color, and in these organs, therefore, the blood has nearly the same hue in the veins as in the arteries.

The truth is, that the color of the blood is different in many parts of the circulatory system. Though the venous blood, as a general rule, is everywhere dark, yet it is considerably darker in some organs than in others. The venous blood, for example, coming from the intestines by the portal vein, is darker than that coming from the kidney by the renal vein; and the blood of the hepatic vein, after circulating through the liver, is darker than that of the venous system generally.

Here you have, in these test-tubes, various specimens of blood, which were collected this morning from various parts of the circulatory system. The different colors which they present will illustrate what I

have just said. In one of the tubes there is arterial blood from the carotid artery; in another, ordinary venous blood, from the jugular vein; in a third, venous blood from the vessels of the kidney, which, though somewhat darker than the arterial blood, is very much brighter than that from the jugular; and in a fourth and fifth, you have specimens of portal and hepatic blood, which are darker in hue than any other.

There are also certain varieties of consistency in these different specimens, which are, no doubt, of importance, in regard to their ultimate constitution.

But there is also another fact in this connection, which was first discovered by Bernard, and which is more remarkable than any which I have yet mentioned, viz.: that *the venous blood coming from the same organ has a different color at different times.*

Something of this kind, you will recollect, was noticed in regard to the kidney; but it was first observed in a positive manner in the case of the submaxillary gland. By exposing this organ, and placing a silver canula in the submaxillary (Wharton's) duct, the secretion of the gland could be watched, and the color of the blood in its veins be observed at the same time. Now the secretory action of the submaxillary gland may be excited, at any time, in the living animal, by introducing a little vinegar into the mouth, and thus stimulating the organs of taste. Bernard found, accordingly, that if the submaxillary veins were examined while the organ was in a state of rest, the blood which they contained was of a dark purplish hue, hardly distinguishable from that of any other venous blood. But if a little vinegar were introduced into the mouth, so as to excite the organ by a reflex action, the saliva in a few seconds began to be discharged in abundance from the end of the canula, and immediately the blood in the submaxillary veins became red.

The same experiments were tried upon the parotid gland, and gave a similar result.

But Bernard also made some further investigations, of a very interesting nature, in regard to the influence of the *nerves* in modifying these conditions of the circulation. I have already spoken of the action of vinegar introduced into the mouth, in exciting the submaxillary secretion, as a *reflex action.* The proof of this is the following: The submaxillary gland, as we know, receives nervous filaments, through the submaxillary ganglion, from two different sources: first, filaments derived from the carotid plexus of the great sympathetic; and second, filaments from the Lingual branch of the Fifth pair. We know, also,

that those coming from the Lingual branch of the Fifth pair are, in great part, a continuation of the *chorda tympani*, which is derived originally from the facial nerve, and joins the Lingual behind the ascending ramus of the lower jaw.

It has also been found that the chorda tympani is essential to the action of vinegar in exciting the secretion of saliva by the submaxillary gland. For if the vinegar be introduced into the mouth of the animal after the chorda tympani has been divided, no excitement of the glandular action is produced, while, before the section of the nerve, the saliva will be discharged in abundance whenever the sense of taste is stimulated by the vinegar. Furthermore, if the chorda tympani be divided in the middle of its course and its central extremity irritated by galvanism, no effect is produced; but if the galvanism be applied to the detached portion of the nerve, which is still in connection with the submaxillary gland, an increased secretion of salivia is immediately produced.

The chorda tympani, therefore, has a directly stimulating action on the submaxillary gland, and, when irritated, excites an unusual flow of submaxillary saliva.

Now, Bernard endeavored to ascertain whether the nervous filaments distributed to the submaxillary gland exert a similar influence upon the color of its venous blood. For this purpose he exposed the gland as before, and inserted a canula into its excretory duct. But instead of exciting the gland by the introduction of vinegar into the mouth, he exposed the nervous filament which is supplied to the gland by the Lingual branch of the Fifth pair. On galvanizing this nerve, he found that the discharge of saliva very soon became abundant, and the blood in the submaxillary veins, at the same time, assumed a red color. On stopping the galvanization, the saliva again became scanty or ceased running altogether, and the blood in the veins of the gland resumed its dark color.

It was noticed, however, that both these effects required a little time for their production. Thus, it was only a few seconds after the commencement of the galvanization that the saliva began to be discharged actively, and the venous blood became red; while both the discharge of saliva, and the ruddy color of the veins, continued for a short time after the galvanization had ceased.

Galvanization of the chorda tympani had the same effect; stimulating the discharge of saliva, and causing the blood in the veins to become red. But there were also other effects observed at the same time. For the blood not only assumed a red color when the nerve

was galvanized, but also became unusually abundant, and passed from the capillaries of the gland into the veins in larger quantity in a given time, while its pressure was also evidently increased. Thus we have, in consequence of galvanization of the chorda tympani, four different effects simultaneously produced:

1st. Increased discharge of saliva.

2d. Increased rapidity of the circulation through the gland.

3d. Increased pressure of the blood in the vessels of the part; and

4th. A red color of the blood in the submaxillary veins.

But if the chorda tympani were simply divided or tied, instead of being galvanized, then the saliva flowed less abundantly, and the blood in the veins became darker.

On the contrary, if the same experiments were tried with the carotid filament of the great sympathetic, the effects upon the submaxillary gland and its circulation were directly the reverse. When this filament was irritated by a galvanic current, the secretion of saliva was at once diminished in quantity, and the blood became darker in color, and flowed less rapidly through the vessels of the organ. It seems, therefore, that there are two nerves, exerting opposite influences upon the submaxillary gland: viz., the chorda tympani, which stimulates its secretion and causes its venous blood to become red; and the carotid filament of the great sympathetic, which diminishes its secretion and causes its venous blood to assume a dark color.

But the most marked effect was produced, in Bernard's experiments, when one of these nerves was divided or tied, and the other galvanized at the same time. Thus, if the chorda tympani were tied, and galvanism then applied to the submaxillary filament of the sympathetic, the discharge of saliva stopped altogether, the blood passed very slowly through the vessels of the gland, and became of an excessively dark color; but if the filament of the sympathetic were then divided, and the galvanic current passed through the chorda tympani, in a few seconds the saliva was poured out in great abundance, and the blood in the submaxillary veins became of a brilliant red, and was poured into them from the vessels of the gland in large quantity, and with a "pulsating movement similar to that of an artery."

Here, then, we have two glandular organs, the submaxillary and the parotid, in which the color of the blood varies in a most remarkable degree; and, what is very curious in this respect, while the organ is at rest, the arterial blood is transformed, in passing through its vessels, and assumes a blue color; but when it is in a state of ac-

tivity, the blood seems to suffer no alteration, and passes out, by the veins, with its ordinary arterial hue.

There seems to be a strange anomaly about this fact, which it is, at first, difficult to understand.

I have no doubt, however, that the explanation which Bernard first gave of this matter is, for the most part, the true one. In all the bodily organs there are two different conditions, which alternate with each other more or less completely. These are, first, a condition of external activity, or *function;* and secondly, a state of internal activity, or *nutrition.* We may compare these two conditions, in the separate organs, with the waking and sleeping states of the whole body. In the waking state, the functional activity predominates, and all the organs are at work, and consequently become more or less exhausted. During sleep, the senses and the active powers generally are suspended, while the processes of nutrition and reparation go on, and the vigor of the body is restored.

Now, as we have already seen in a previous lecture, the fluids secreted by the glandular organs are always composed of two different kinds of ingredients: First, a peculiar and characteristic animal matter, such as the *ptyaline,* or viscid substance of the saliva, which is produced and manufactured in the substance of the glandular organ itself; and secondly, the accessory ingredients, such as water, saline matters, &c., which are derived directly from the blood, and merely exude from the vessels by exosmosis.

During the interval of rest, therefore, while there is no external discharge of a glandular secretion, the peculiar animal substance which is characteristic of it is being produced by the processes of nutrition, and stored up in the tissue of the gland. It is during this period that the blood circulates slowly through the vessels of the organ, and becomes changed, during its passage, from arterial to venous. For a great deal of oxygen is used up in this process, and a great deal of carbonic acid evolved. Consequently, the color of the blood suffers a complete alteration. But when the stimulus comes which excites the external functional activity of the gland, then the circulation of the blood in its vessels is hastened, its pressure increased, and an abundant exudation of watery and saline matters takes place, which carry away with them the animal matter already accumulated in the glands, and so supply a large quantity of the secretion by mere exosmosis from the blood.

We can easily convince ourselves that this is true, by noticing the change in composition of a secretion, during its continued discharge.

When the secretion is excited, after a long interval of rest, the portions first discharged are very rich in the peculiar animal matters supplied by the gland. But as it continues to flow, it becomes less and less concentrated, and the longer it continues to be discharged, grows constantly more and more watery in its composition.

This is because its animal constituents are supplied by the nutrition of the gland, which takes place slowly, and only during the interval of rest; while its watery and saline ingredients are derived from the blood, and will continue to be supplied in abundance, until the whole blood is itself impoverished.

So, while the secretion is being actually discharged, there is comparatively little consumption of oxygen by the gland; and the carbonic acid which is evolved, instead of being carried away by the blood alone, is in great part discharged by the secretion itself. The blood, accordingly, does not at this time become blue, but retains, more or less perfectly, its arterial color.

But this is very different from what takes place in a muscle. For in the same series of experiments which I have just mentioned, Bernard found that when a muscle is relaxed its venous blood is comparatively red in color, while as soon as the muscular fibres are thrown into a state of contraction, the blood becomes dark-blue. To understand this, we must remember that the muscle is not only nourished, like other organs, while in a state of repose, but that during its contraction its animal ingredients undergo a rapid decomposition, with an abundant evolution of carbonic acid; and this carbonic acid is not discharged, as in the case of the glandular organs, by a secreted fluid, but is absorbed and carried away altogether by the venous blood; the blood, therefore, in this instance, necessarily acquires a strong venous tinge.

In a state of functional activity, therefore, the venous blood coming from the muscles is blue, while that coming from the kidneys and the salivary glands is red.

Are there any other organs in which the venous blood retains its arterial color?

I have found this to be the case with the internal organs of generation, in a number of experiments which I have performed for this purpose. I will relate some of these experiments, with the results which were derived from them.

Experiment, Sept. 5th.—A young tom-cat was etherized and opened twenty-four hours after feeding. The spermatic veins contained *perfectly* red blood, not different in color from arterial. The blood of the renal veins was purplish red.

Experiment, Sept. 12th.—A tom-cat was etherized and opened four hours after feeding. The spermatic veins, which were at first dark, became ruddy after a few minutes. (The dark color at first was possibly owing to some obstruction to the venous circulation.)

Experiment, Sept. 5th.—An adult female cat was etherized, twenty-four hours after feeding, and the abdominal cavity opened. The uterus was empty. The uterine veins contained *perfectly* red blood, not distinguishable in color from that of the uterine arteries, and contrasting strongly with the dark blood of the vena cava. The blood of the renal veins was quite ruddy, though not so red as that of the arteries, or of the uterine veins.

Experiment, Sept. 9th.—A female cat, not pregnant, was etherized and opened one hour after feeding. The blood in the uterine veins was of a brilliant red, similar to that of the arteries. The blood in the renal veins was of a reddish purple, less bright than arterial blood.

Experiment, Sept. 15th.—A female cat, not pregnant, was etherized and opened, seven hours after feeding. The renal and uterine veins were both at first of a dark color, but both after a few moments became very ruddy, the uterine veins remarkably so.

While the uterus is in an inactive condition, therefore, the blood returns from it to the veins, with its color unchanged. But this is not the case in the condition of pregnancy, as was seen in the following experiment:

Experiment, April 19th.—A female cat, nearly arrived at the termination of pregnancy, was etherized and the abdomen opened. The uterine veins, which were very large, were full of perfectly dark blood, though the renal veins, at the same time, showed a distinct ruddy color. The fœtuses were all alive and healthy.

This venous condition of the blood in the uterine veins does not depend altogether upon the growth and development of the fœtuses, but partly, at least, on that of the uterus itself. I have met with one instance in which this was proved very distinctly.

Experiment, Sept. 12th.—A female cat, pregnant for about four weeks, was etherized and opened. On examination, all the fœtuses were found to have been withered some time previously, though the uterus and placentas had continued to enlarge. The blood in the uterine veins was very dark.

The same condition also continues after delivery, probably so long as the uterus remains enlarged, and while it is undergoing its retrograde evolution.

Experiment, Sept. 12th.—A female cat, that had been delivered a

short time previously, and was still in lactation, was etherized and opened. The blood in the uterine veins was dark, though not quite so deep colored as that of the vena cava.

Here, then, we have two differing conditions of the uterus—an inactive or quiescent condition, in which the blood passes through the organ unchanged in color; and a condition of active development, in which the blood in its veins becomes blue. How are we to understand this difference? I presume its cause is to be found in the peculiarly intermittent nature of the uterine functions. In the non-pregnant condition, the uterus is probably the most inactive organ in the whole body. It has literally no function whatever. The nutritive changes which are required to maintain it in a state of integrity are therefore very slight, and yet it must be tolerably well supplied with blood, since it may at any time be called into action. Its tissues consequently suffer but little alteration, and there is but little change of the color of the blood in its vessels.

As soon as pregnancy is established, on the other hand, the substance of the uterus begins to enlarge, and continues to be developed in a very remarkable manner. It is to be noticed, also, that the function of the uterus, during pregnancy, is altogether a *nutritive* one. A very large quantity of its own tissues are newly developed, and it has also to supply material for the growth and support of the young embryo. It is precisely in performing such functions as these that we have seen the blood in other organs become changed in color from arterial to venous, and there is even more reason for this to occur in the pregnant uterus than elsewhere. Beside, I have already mentioned that the blood of the fœtus, in passing through the placenta, becomes changed in color, partially at least, from blue to red; and as this change is effected altogether by the influence of the circulating fluid in the maternal part of the organ, it is easy to understand why it should be accompanied by a corresponding alteration in the maternal blood, and that this should be changed, at the same time, from red to blue.

But we must recollect, gentlemen, that after all, these are only explanations. The facts which we have learned, however they may be accounted for, are important ones, since they show that the alterations, which the blood undergoes in the tissues, are not only different in different organs, but in the same organ at different times. While the constitution of the arterial blood is everywhere the same, that of the venous blood is everywhere different. The circulating fluid, therefore, which distributes the same materials to every part of the body, brings back to the venous system a multitude of different ingredients.

Ligatures and Sutures. By ROBERT NELSON, M.D., New York. (Read before the Medico-Chirurgical College, June 28, 1860.)

Before entering upon an examination of the operation and effects of a ligature upon a living structure, it will be proper to make a short exposure of that action which is called ulceration; since every ligature is sure to cause ulceration, that being the process by which they free themselves, or "cut their way out," as it is commonly termed.

An ulcer is an excavation or destruction and removal of a portion of a free surface, while the neighboring parts retain their integrity. It continually oozes forth a watery or a purulent fluid, or both of these more or less mixed. The first step that leads to ulceration is *liquefaction* of the atoms composing the part; the absorption of this liquefied matter as fast as it is formed, and as long as the surface where it takes place is sealed up by an impermeable covering, as the epidermis. When this barrier is destroyed, no longer compelling absorption, the liquefied atoms escape by exudation. An ulcer may happen in any free surface—as the exterior of the body—the surface of mucous canals—rarely, if ever, on true serous surfaces—the free surface of veins or arteries, possibly—the interior surface of artificial cavities when they communicate exteriorly, as in open abscesses and sinuses.

Ulceration is of two kinds: 1st. That which is due to a morbid state of the whole system—as in scurvy, or syphilis; or from a morbid state of only a part of the body—as in varicose ulceration of the legs. 2d. That which has a local origin—follows the direct loss or division of substance by mechanical causes, as wounds, or pressure that arrests the arrival of nutriment destined to replace the natural decay and liquefaction of atoms which have served their time—or chemical destructions, such as poisons, burns, frost, &c.

It is unnecessary on the present occasion to follow out all the foregoing causes and forms of ulceration, since only one of these—pressure—is concerned in the ulceration due to ligatures and sutures, and I now proceed to endeavor to explain how this takes place. The alphabet of ulceration is best learned by studying what takes place in bed-sores; for these are ulcers of the simplest kind, and are precisely similar to the ulceration produced by ligatures in their track surrounding the included substance. The bed-sore is not preceded nor accompanied by inflammation, at least until it has existed some time, and then only at its limits. It is produced by the pressure a part suffers, during long confinement of debilitated persons to one position—as is seen

in cases of phthisis, or prolonged fevers; but does not happen to patients otherwise healthy, and in whom nutrition is active—as in cases of fractured femur, where confinement to one position is equally prolonged.

The first letter of this alphabet is:

1st. *Liquefaction*, or natural decay and waste of atoms that have served their period.

2d. *Absorption*, or discharge of this liquefied and effete matter.

3d. *Suppressed Nutrition*, due either to an arrest of supply of nutriment, or arrest from any other cause.

4th. *Exudation of the liquefied matter;* and more or less secretion of pus, which is a reparative process, or an attempt to create a covering to the naked and open surface.

Liquefaction.—The atoms composing the body live only a limited time; after which they liquefy into effete matter, their place to be restored by new atoms derived from the daily nutrition carried to all parts mixed with the blood.

Absorption.—The liquefied effete matter is absorbed with the regularity of its production, is taken into the torrent of the circulation, and is eliminated from the economy by sundry special structures—as the lungs, kidneys, &c., and discharged as so much excrement.

Suppressed or arrested nutrition.—Should the natural supply of pabulum furnished by digestion (which is poured into the torrent of the circulation and mixed with the blood) be arrested in its destiny, by any means, atrophy must ensue; for in that case nothing reaches the part to be there assimilated into the place of the decayed atoms which are ceaselessly being removed, and in a healthy state of the part as ceaselessly restored by new creation. Long before the formation of a *bed-sore*, the whole body has become debilitated, atrophied. The nutritive function is weakened, leanness becomes universal, and as a consequence, the projecting portions of the skeleton are no longer adequately cushioned. These projections—say the sacrum, ilii, elbows, &c.—compress the intervening soft tissues against the resisting bed. This pressure squeezes out of the intervening substance, not only the juices usually there, but also compresses into complete emptiness the blood-vessels now attenuated with the rest of the body, arresting through their course both the blood and the accompanying pabulum furnished by digestion for the supply and support of tissues, maintaining a state of total inanition, and that, while waste is steadily and naturally going on. This empty state of the vessels is produced by pressure, in the case of the bed-sore, and is easily seen and proved in this way: let a plate of

glass be substituted for that part of the bed on which the projecting bone presses, and a corresponding piece of the bed removed so as to enable the observer to see through the glass; the part will be seen to be quite *white*—bloodless, absolutely bloodless. A simpler and readier mode to make manifest the bloodless and nutritionlessness state of the part is to roll the patient on to his other side, expose the bedridden part, which, now that the previous pressure is removed, will have become deeply red, being pervaded by a flux of blood into the attenuated vessels. Press on to this red surface a piece of glass, and instantly the newly arrived blood, (and its accompanying pabulum) the red blush, wrongly called inflammation, is expelled—squeezed away, and the part is seen white and bloodless. It is now evident that the constant pressure produced by lying long on the same part must exclude nutrition, while liquefaction, and absorption of the liquefied effete matter, is steadily progressing; until, at last, all the soft parts intervening are removed, leaving an open raw surface—an ulcer. The deep red and an ensanguined appearance of a bedridden part seen when pressure is removed is called inflammation by the nurse and superficial observers; but wrongfully so, for in every case of inflammation a fibro-serous substance is effused into the interstices of the part affected, or on the surface, but in the preparatory steps of the bed-sore nothing of the kind does or can happen. The great redness seen when the pressure is removed is due not to inflammatory enlargement and distention of vessels, but to the sudden influx of blood into vessels attenuated by long pressure; and the accompanying heat is due to the same cause—an increased volume of blood. The real state of the part is simply a congestion.

Exudation of the liquefied matter, and the discharge of pus. The first three letters of this alphabet, or conditions, of ulceration having reached their completion, the epidermis gives way—a solution of continuity—an open ulcer exists. The epidermis was a restraining barrier that prevented the liquefied effete matter from escaping, and forced it into absorption; but when destroyed, or detached from its intimate adhesion, the fluid finds a more ready escape by transudation at the surface than by integral absorption.

Generation of pus and of granulations.—There are ulcers that do not generate pus continually, and the same may be remarked of granulations. This defect is often apparent in the common varicose ulcer, which always transudes a fluid only, but which has more often pus added to it. When the dyscrasia, or other cause, productive of an ulcer is weak, a tendency to repair is seen in the attempt set up by a

generation of pus, and granulation—new products hitherto unknown to the economy, destined to serve in the place of the lost covering, ultimately drying into an epidermis—the first stage of a cicatrix.

It is unnecessary on the present occasion to discuss the part taken by the nervous matter that enters into the composition of the tissue in which ulceration takes place. Enough has now been said to explain the principle upon which ligatures and sutures sever the structures they include—a severance that has nothing in common with a cut—"cutting their way out," as it is sometimes called.

How Ligatures and Sutures act.—Ligatures are placed around vessels, and are necessarily drawn tight, that they may occlude the cavity. Sutures are passed through the soft parts in cases of wounds to draw the sides together, but are drawn no tighter than is sufficient to hold the parts in approximation. Both exert a compressing force on the substance included in their grasp, and in proportion to this pressure do they atrophy the intervening substance, precisely as is seen, but on a larger scale, in the case of a bed-sore. But, before describing their physiological operation, let us examine what takes place in the case of a seton, which is an example of the simplest action of a ligature, or rather a suture, although it properly belongs to the *fourth* condition of an ulcer—generation of pus and granulation.

The wound that is made to receive the seton converts the structures through which it passes, heretofore closed, into an open surface unprotected by epidermis, scab or crust, that could seal the surface, and by such covering arrest the escape of the ambient interstitial fluids. As the track is not in a morbific state, a reparative process is soon set up—first by the effusion of lymph, next by secretion of pus, and lastly organization of granulations; but no complete reparation can happen because of the presence of a dead body—the seton. So long as the seton simply lies in the wound without compressing any part of it, the effort at normal reparation goes no farther than a generation of pus and granulation. In this way a seton may remain in the parts for many months without "cutting its way out." But should the tails of the seton be drawn taught and so tied, it will press on the inner edges of the bridge at each orifice of the track, and in proportion to the pressure so exerted, will squeeze away the interstitial juices nearest by, and at the same time proportionally arrest the arrival of nutriment to restore normal waste—liquefaction—of atoms that have served their period of existence. Let the tails of the seton be tightened daily as fast as they relax from the shortening of the bridge wasted away by the pressure, until at last the seton will have

worked—ulcerated—its way out. While this destructive process is going on through the bridge by reason of the seton-pressure at its ends, the distal edges of the orifices of the track, suffering no pressure, no arrest of nutrition, are actively engaged in reparation—pus is formed and granulations organized, epidermis dries over them and seals their surface against exudation—a cicatrix is formed, following in equal paces the destruction of the bridge. In all this the seton has exerted no "cutting power;" it has simply arrested the nutrition of the portion compressed, while liquefaction naturally progressed. A similar operation is performed in those cases of fistula in ano which are treated by a leaden ligature, the weight of which is constantly pressing on the upper orifice of the fistula, atrophying it there; and in a few cases permitting of the generation of granulations and the filling up of the track outside of the grasp of the lead. A simple thread tightened daily would have answered the same purpose. It is a filthy and a most unphysiological procedure. Another example is often met with—that of ear-rings. When the lobe is pierced and a *light* ring inserted, the track soon heals, and is protected by an epidermis. Should a heavy ring be subsequently substituted for the light one, its constant pressure arrests the arrival of nutriment where it bears, while liquefaction and absorption of disintegrated substance as steadily goes on, without any oozing out because of the retaining epidermis. The process is a slow one; but at last the weight of the ring has gradually atrophied itself through, leaving the lobe divided into two portions.

Ligatures.—When a ligature constringes any living part, a vessel, base of a tumor, or other structure, its first effect, like in the bed-sore, is to squeeze away the interstitial fluid that is always more or less present in, and fills out, every structure. The second effect is the exclusion of the arrival of any nutriment within the part constringed, to be appropriated to the regeneration of the normal destruction of atoms that ceaselessly goes on. In this way, a ligature works (not cuts) its way through the part it encircles, as the base of a tumor, or the calibre of an artery. In the case of tumor the distal portion of it dies of inanition, mortifies, and sloughs off; while the part constringed goes through the process of ulceration produced by pressure. In the case of an artery, its two inner coats, possessed of very little circular tenacity, are readily divided by a narrow ligature tightly drawn. The cut so produced throws out fibrinous lymph, which soon becomes organized, creating a uniting medium that permanently closes the vessel, while the portion which lies immediately within the grasp of the ligature slowly disintegrates and suppurates until the ligature is detached.

I purposely avoid detailing the various facts that regard the formation and presence of a coagulum destined to fill, or plug up, the calibre of the vessel for some distance beyond the ligature, or as far as to the next nearest branch given off; for this plug does not in the least degree influence the operation of the ligature. The foregoing described process is that which takes place in every case where a narrow ligature, as a thread, is used, and in healthy patients; but when a morbid state of the system, or vessel, exists, the effect of the ligature will still be the same as regards the cutting and ulcerating through the constringed part; but the throwing out of adhesive lymph, and its organization at the cardiac side of the divided inner coats, may not take place, or taking place, be so feebly organized as not to constitute a sufficient barrier; in which case, even before the ligature is wholly detached, the impulse of the blood will rupture such a feeble barrier, and give vent to hæmorrhage—secondary hæmorrhage. The working through of a ligature, while occlusion of the vessel is imperfect, used to be of frequent occurrence in the early employment of ligatures, even in healthy patients, on account of the size of the ligature. The fear that a narrow ligature would cut through the vessel too soon, prompted the employment of a thick cord, even of a flat tape, and in these cases secondary hæmorrhage was a frequent occurrence. Some went so far as to interpose lint or rag between the vessel and ligature; but these precautions nearly always were followed by the accident they were intended to guard against—secondary hæmorrhage. At last the subject was critically inquired into by Jones and Hodgson in a series of experiments on animals, which established the proof that a mere thread was the safest form of ligature, and led to the conclusion that a division of the two inner coats of an artery was essential to secure a permanent closure of the vessel; that this division permitted the coats to retract, come together, and diminish the calibre of the vessel; to come together, and unite by the adhesive lymph that their divided face threw out. To these effects, it was added, that a coagulum formed in the vessel from the site of the ligature onward, and that this coagulum adhering to the coates of the vessel aided in the security. At that early time several other curious theories prevailed; one was, that in cases of aneurisms, it was necessary to apply two ligatures to the vessel, and divide it between them, to permit it to retract and bury itself in the tissues. Another was, in amputations, to apply two ligatures, one tight, the other loose in reserve, to be tied in case the first should cut through too soon, or be driven off by the pulsations. Another precaution at times taken was to transfix the ves-

sel with one end of the ligature, and make a knot on it, in the hope that this would prevent the impulse of the blood from forcing off the ligature. At last experience discarded all these notions, and established the present mode—that of a single narrow thread—which is safe, suitable in all cases, and rarely followed by secondary hæmorrhage when the patient is in tolerable good health. But should the vessel exceed the calibre of the femoral or carotid artery, the best kind of ligature, and best applied, may sometimes fail, even in the hands of the most able surgeons; its failure is certain in a vessel the size of the innominata, pretty certain on the subclavian, and not infrequent on the common iliac. The cause of this failure lies in the size of the vessel and not in the ligature, as any reflecting mind would anticipate, and any person might detect on an examination of these large vessels; but enough has been said, as the subject is limited to the ligature.

Sutures.—An interrupted suture employed to close a wound acts on the part within its grasp precisely as was stated when describing the "cutting out" of a seton. The tails of the cord are drawn tight, and press on the inner edges of the orifices of its entry and exit; this pressure excludes nutrition and repair while liquefaction and destruction go on; the result is ulcerating, not cutting out; it is a physiological, not a mechanical severance of the part. Many persons suppose that a narrow ligature will work through quicker than a broad one; this idea is true only in proportion to the relative force exerted between a narrow and a broad cord; since an equal amount of traction applied to both will be much greater on the narrow than on the broad one. The *twisted* suture acts in the same way that the interrupted one does, only that the pressure is less equally divided, being greatest at the points and less above and in the track of the wire, which is simply an unyielding skewer. In all these cases the process of working or cutting through the part is the same as that which takes place in the bed-sore.

Material of which Ligatures are made.—Animal fibre, such as sinew from fascia, cat-gut, even leather, have been employed, under the idea that they were more congenial to the living tissue than cords made of heterogeneous substances, as silk, flax or hemp. A very little reflection would at once convince any one that animal substances would prove to be the worst kind of material for this purpose: 1st, It would quickly imbibe moisture, become soft, extensile, and lose its grasp. 2d, It would be subject to decomposition, perhaps putrefy, and so add a poison to the wound in which it lay. However, it was soon abandoned. Silk thread, on account of its great tenacity and even size,

got into vogue early, and still maintains its standing, especially in private practice, but it possesses no advantage over vegetable fibre than what is due to its greater strength. Flax or hemp thread, like silk, suffers no alteration in a wound, however long retained; and if there be any difference between it and silk as regards exciting irritation, it probably lies in favor of the vegetable fibre. In hospital and military practice, where economy becomes an item, all other effects being equal, flax or hemp thread, on this account, holds a superiority over silk, and is the material generally used.

Metal.—Lead has been suggested and even used under the dictum that it is innoxious, even friendly to living tissues, seeing with what impunity leaden balls remain for years in the flesh. But its want of tenacity prevents its being drawn into wire sufficiently fine to serve either as a ligature or a suture.

Silver has long been in use, especially in the twisted suture; but it presents many disadvantages. 1st, To insert it in a steel or other hard point is requisite; 2d, Silver tarnishes very soon, (however pure,) being quickly acted on by the fluids, or it acting on them; and it is likely that for this reason, a silver suture suppurates more than silk or flax. 3d, A stock of these pins or wire must be kept on hand, and the pins can be used only once, since the projecting ends ought to be cut off to prevent them interfering with the dressings; and after their insertion they must be bent to suit, and lie easy in their track; even then they do not lie so easily as silk or flax, but still maintain the character of a skewer. To inexperienced persons all this seems to be a trifle; but good surgery never neglects trifles.

Tin, from its want of tenacity, like lead, cannot be drawn sufficiently fine. This objection is easily overcome by tinning brass wire. More than forty years ago, meeting with the vexation of ulceration from silver pins in hare-lip operations, I had recourse to common household pins, and found the result so favorable that I have ever since employed no other kind. The advantage they possess over silver is, that they are readily inserted without the aid of a steel point; that they do not cut the parts, but merely thrust them apart; that they never tarnish or excite any chemical action, as silver does; that they are easily bent to suit the track; that they are cheap and always at hand, and cutting off the projecting ends is no loss. As a contrast between silver and tinned pins, I may mention one case. Seven years since I laid open the abdomen from the pubis to the sternum for ovarian tumor. Not being able to procure long common pins, I was forced to use three or four of silver to effect the principal approximation, and in the

intervals I inserted several ordinary pins. Those of silver suppurated in their whole track and had to be removed on the third and fourth day, while the others were left in six days with complete impunity, leaving no mark after the cure, while the sites of the silver ones all formed cicatrices, that are very apparent yet, now seven years since the operation. These facts have been verified a few days since by several members of this society, who have examined the lady. It may not be out of place to mention one more case in favor of common pins. A fashionable lady, sky-larking, received a slap in the face from her friend, the diamond ring on whose finger cut through the upper and lower eyelids, but strange to say, did not injure the eye. In this case, I inserted at the edges of the tarsus of each lid one of the smallest sized pins, (baby-pins,) bent them to suit the part, and cut off the ends. The rest of the gap was easily held by an adhesive strap and compress. Thirty-six hours after the pins were removed, agglutination was perfect, and a cure without a mark effected. About thirty years back, sewing needles were used by Mr. Lawrence, I believe, at St. Bartholomew's Hospital, in hare-lip; but being steel, could neither be bent nor the ends cut off, which rendered them inconvenient.

Platinum and Gold.—I do not know that platinum has ever been used. In 1829 or '30, I used gold in a case of vesico-vaginal fistula, and since, as a clamp suture, which answered well. One of these I presented to one of the leading surgeons of the New York Hospital; and in 1840 or '41, that gentleman got explanations from me how to use it, he having a case of a lady from Mobile. But he never mentioned to me whether he was successful or not. However, I do not imagine that these costly metals possess any advantage over the equally serviceable iron wire lately introduced into practice. It is very tenacious, small in size, from thirty to forty of the wire guage, quite flexible, does not irritate the parts. It is previously annealed to soften it, and this coats it with a thin layer of protoxide, which is unaffectable by the fluids of the part, and protects the rest from rusting—sesquioxydation. It is cheap, and accessible to every one. It is strange that the justly celebrated surgeon who introduced iron wire into notice as a ligature, should insist on its unoxydizability as one of its great merits, while the fact is, that the brightest wire, as a steel needle, is prone to oxydize in the flesh in a very short time, not many minutes, as is daily witnessed in practice; for when a servant breaks a piece of needle in her hand, or elsewhere, on removal, even half an hour after the accident, it will be found to be black—protoxydized. Needles are often removed from the body, where they have remained several years buried or traveling in the flesh; they are always found blackened, due

to a coating of protoxide, all this time, without irritating, without producing a single atom of pus, or being surrounded with any fluid. This thin coat of protoxide completely protects the metal within from additional oxydation; nor is it susceptible of taking to itself an additional dose of oxygen, to become rust—sesquioxide.

Another falsity has lately been argued in favor of iron wire, (which needed no false recommendation,) that it, unlike fibrous materials, cannot be penetrated by pus, &c., like silk or flax, which imbibe the ambient juices, retain them to become noxious, even poisonous. In support of this view an experiment is adduced: a wound was made in a pig, and a fibrous suture used to close it. A few days after, another wound was made, into which the saturated suture taken from the first wound was deposited, when, behold! the new wound becomes irritated—empoisoned. The conclusion deduced is, that the iron suture is safe, because it cannot imbibe and retain these fluids, while the fibrous one will. A very little *nous* would have suggested to the author of this silly experiment that his first wound received a clean cord, and that he deposited into a fresh wound one that was saturated with morbific matter. He lost sight of the fact, that the ligature did not become morbific until the fresh wound had become a secreting, not an absorbing surface—a surface that was continually *washing away;* while the new wound, into which he put his saturated suture, was a fresh one, had veins, absorbents as well as nervous atoms, raw, and exposed to the deleterious matter of the old suture. Had he remembered what takes place in the track of an old seton, protected by a secreting surface and a coating of congenial pus, he probably would not have fallen into the error he was so ready to publish. It is erroneous conclusions deduced from stupid experiments, flippantly promulgated, like this piggis one, that mislead the judgment of those members of the profession who exercise it as a *business*, not as a science, leaving the labor of histology and physiology to others, accept *printed* dicta as truths without taking the trouble, and sometimes without the capacity to understand them.

Another, and a new substitute for a ligature on vessels, has lately been introduced—*acupressure.* This has been several years in use as a clumsy mode of closing varicose veins. It will often prove useful, no doubt, in the hurry attending upon accidental wounds, to serve as a primitive ligature; and will have its run among enthusiasts and seekers after novelty, where the usual ligature will prove better. But who has forgotten the much boasted Torsion of Amussat? which, like this, was recommended and employed even in amputations of the thigh.

It had its day. As to the remark made by its advocates, "*How little compression of a vessel suffices to arrest the flow of blood through an artery,*" was a fact long known to every experienced surgeon, and was insisted upon and published by John and by Charles Bell more than fifty years ago. The rule to draw the ligature on an artery very tight was not made on the idea that such was necessary to arrest the flow of blood through it; but was founded on the experience ascertained of the benefit of dividing the inner coats of the vessel, to arrest the pain that would linger after a lightly tightened ligature, and to secure its early detachment, thereby avoiding what sometimes happened—undue suppuration.

REVIEWS AND BIBLIOGRAPHY.

"*Clinical Lectures on certain Acute Diseases.*" By ROBERT BENTLEY TODD, M.D., F.R.S., &c., &c. Philadelphia: Blanchard & Lea. 1860.

The views of an author so distinguished for medical attainment and practical observation are always eagerly sought after. And so great an influence does such a writer attain, that from one-half of his readers he obtains a ready admiration with an undisputed belief. Not only from his credence as an author does this renown establish itself, but to this is added the authority of the high position of "Physician to Kings College Hospital." The very boldness of stepping out from the routine and long-sanctioned views and practice, adds yet more to the trust of the unquestioning half, whilst it gains from the other moiety either a predisposition to receive with favor the doctrines or treatments advanced, or a determination to examine them with scientific fairness and practical comparison.

In the preface, Dr. Todd states fairly certain problems. He justly draws a distinction between mere morbid anatomy and pathology; whilst he is fully aware that the *last* conditions of deviation from the healthy standard are not to be received unquestioned, as they do not serve to illustrate the *progressive* vitiations incident to the disease in its natural course either of retraction, or of destruction. It is an undeniable fact, that the mental eye of most medical men is filled during the progress of a disease and its treatment, more with the exact morbid findings as witnessed after death, than with the progressive pathogenesis.

From this stand-point these "Clinical Lectures on Acute Diseases" are to be viewed, and not from any pre-educated belief in the results attending a practice totally at variance with the pathological interpretations and remedial doctrines therein taught. The writer of these lines well remembers the terse reply of a very distinguished hospital surgeon, when asked by a stranger of high professional standing "How he cured such a disease?" "We do not *cure* it at all," was the reply, "we *prevent* it!" Such seems to be the *animus* pervading this work.

Dissatisfied with the results of his previous views of practice, and unwilling to continue in the old idea of regarding disease as attended by an excess of vitality, and to apply remedies for conditions *after* they were manifested, Dr. Todd has boldly made issue against these doctrines. In many years we have held and practiced under somewhat similar reasonings, inculcated in this volume, but have not allowed those ultra views to influence us in assailing all antiphlogistic treatment in certain cases, in which it has not only been proved to be salutary, years before we were born, but which is in perfect keeping with the doctrines of progressive pathology taught at this very time. There can be no doubt as to the logical inference, that if, for the most part, supportive treatment has been found beneficial, that in others a depletory course may *sometimes* be called for. The balance of the working powers of life is rarely in the ascendant; but as this may ensue sometimes, under certain conditions, surely a farther departure by the administration of stimulant remedies would be unnatural, and therefore unphilosophical.

The influence of any ultra assertions is not permanent; and, though their unchallenged adoption may lead to temporary evil, yet this very fruit of evil produces seed of future good. The crucible of theories is trial; in the end all conflicting doctrines are sifted, their results weighed by unbiased practical men, and just so much accepted as will stand the discrimination of patient clinical comparison. The error of the old school consisted in the persistent study of the organs *after* death, and not of the *progressive* changes of the dying structures. The one issuing therapeutical dicta for the restoration of parts already destroyed; the other advocating treatments against anormal conditions about to ensue, but whose stride had been learned by the patient study of progressive pathology. From these latter views arose the doctrine of the necessity for sustentation of the working powers of the system, by appropriate alimentation and timely stimulation.

But to discover this *timely* administration, is the difficulty; and its solution is never to be made by the ultra of either opposing par-

ties. In some diseases, the working powers of the system are merely *impeded;* whilst in others they are *impaired.* The rheumatism of the ultimate air-vesicles of the lung, happening in a robust, plethoric young man, is certainly not to be treated in the same manner as when it attacks those parts in an exhausted, anæmic individual. In the plethoric patient, the vascular system is surcharged with blood requiring active oxygenation. But this, from pain, from exudation, and the exhaustive "air hunger" of the lung, is impossible. Nerve-force is abundant; but a mechanical impediment interferes with the just performances of the aerating system. Stimulus would only serve to increase the existing difficulties. It might lash up the force of the nervous system, already supplied more than sufficient for the present automatic purposes of life, but, would it obtain a reciprocal response from the tissues affected, and from the still sound adjacent structures already overtaxed? On the contrary, a greater *necessity* for oxygenation would be excited, whilst it would preclude the *possibility.* Thus *the harmony of relation between cell-action and nerve-force* is *broken,* and the progressive changes in the structures ensue, unless death suddenly supervene before the regular succession of morbid phenomena appear.

Then, what is to be done? Only three modes are practical; but they do not stand on the same level. First, the expectant or let-alone system. Second, the equalizing of the quantity of the blood to the capacity of whatever sound aerating surface may exist. Third, to paralyze the organic and cerebro-spinal nervous system sufficient to allay the demand, not only of the lung, *but the necessity of all the structures,* for oxygenation. The first of these therapeutical positions is trusting more to a *hoped*-for strength in the patient, than in one's own knowledge of the danger, and of our power to remedy from imminent peril and suffering. The second has stood the test of experience, and merely requires the discriminative judgment of the practitioner to avoid the "*minium diligentiæ.*" The third, although successful many times, yet has the disadvantage of disturbing the absorptional translation of any specific treatment for the immediate relief of the patient, independently of polypharmacy, the combined actions of which are always more or less doubtful. Bleeding, local or general, has the advantage of expediency. But in the anæmic individual, every position is changed, and life is to be sustained by early and constantly regular stimulation; whilst such special antagonistic conjunctives are to be administered as may be demanded.

Such cautious views are to be taken, before adopting the apparently ultra enunciations of Dr. Todd's able productions in the volume above

cited. His cases are to be rigidly analyzed as regards the constitutional condition natural to each patient, in conjunction with the existing circumstances of labor, habits, exposure, and antecedent disorders. The effects of localized pyæmia, more or less latently marked—(not septicæmia)—are to be studied, and to be discriminated from rheumatism arising purely from exposure, or from attending blood poverty or depravity. The vital necessities, uses and reciprocities of the various organs attacked—the antecedent relations of the patient to exanthematous disorder, or to renal disease, are to be examined into. The subtle and harlequin disturbances of the organic system or cerebro-spinal axis, &c., these and other states are to be critically investigated. Besides, in rheumatic affections, as in other diseases, there is always more or less disorder of the nutrition of the structures, and the local condition of pain may be owing to an obstruction to the nutritive performances of the tissue itself, as well as to a general but specific depravation of the whole blood.

Elsewhere in these lectures, we find some valuable and discriminative points; but in the opening ones on rheumatism there is a decided neglect of these clinical comparisons. But Dr. Todd has clearly enunciated his views respecting the eliminative actions and periods ensuing in this disease, and the danger attending the colliquant sweatings, so frequently continuing after their proper time. Dr. Todd also strongly advocates the use of opium in anæmia of the brain attended with delirium in rheumatism. He also practically attracts attention to the urine and its eliminative deposits during the disease. But with this attention, we must urge great caution as to the administration of opium. We are satisfied, from extensive observation, that this drug frequently ushers in, by its paralyzing influence over the organic system and the vaso-motor nerves of the brain particularly, the very effusion so much to be dreaded, and which is a natural incident in the terminating course of the disease, and against which practically scientific men direct their remedies. Hence we cannot be too cautious in its administration; and this, too, particularly when the kidneys, bowels and liver are making either normal or excessive actions of depuration. We have seen dropsy or effusion immediately supervene after its use, the eliminative actions of the kidneys, bowels and liver being suddenly arrested in their eliminative actions, both fluid and solid. And the same has followed the unscientific employment of *acid* tonics, or hæmagenic remedies, whereby the ammonia combining with the uric acid has been proportionately neutralized at the expense of retarding the egress of the latter from the system, or of altogether restraining it, to the

vast injury of the patient. Nor do we see any mention of the influences of remedial applications over the cardiac or renal regions, in disturbances of these organs in rheumatism.

Our space, however, will not permit further discussion of this most attractive volume. But we cannot close without commending for adoption the spirit in which this open publication of the author's views has been made. But too many medical writers satisfy themselves in producing a book, with a well-disguised re-hash of the opinions of others, and without much self-committal or originality. The honest and frank avowal of these pages, even if they were filled with errors, is far preferable to old repetitions, (truths though they may be,) redressed. An active error is even instructively better than a sleepy truth. One incites investigation, denial, and discussion. The other retains but its new clothes to attract to its inanimation.

But, alas! since the publication of this volume, the active and well-stored brain of its author has ceased to work. Death, ever busy with prince or peasant, the gifted or the idiotic, has spared not *him*, whose life for a long period of years had been devoted to the exercise of humanities, and to the explorations of a science whose aim has ever been against the ravages of the ruthless destroyer. Full of honors, conscious of the power invested in him to sift the golden sand from the sable—trusting to the sustaining hand that was pleased from evermore to link the creature with the Creator—with hope from previous health—with anticipations of a coming age to be made honorable by past exertion and daily addition—and, without a doubt, when called "to cease work," of the soul's futurition—he, the gifted and the trusting, has been summoned away, leaving us, his brothers, to mourn an instructor, to admire his untiring zeal, and to be grateful for his services now passed forever. *Sic nobis.* H. P. D.

On the Diseases, Injuries and Malformations of the Rectum and Anus, with Remarks on Habitual Constipation. By T. J. ASHTON, Surgeon to the Blenheim Dispensary, &c., &c. Philadelphia: Blanchard & Lea. 8vo, pp. 292.

This volume is a reprint of the third English edition, of which the author says in his preface, that it has been carefully revised, and to which some wood-cuts have been added as illustrations. The topics of its chapters are as follows: 1, Irritation and Itching of the Anus; 2, Inflammation and Excoriation of the Anus; 3, Excrescences of the

Anal Region; 4, Contraction of the Anus; 5, Fissure of the Anus and lower part of the Rectum; 6, Neuralgia of the Anus and Extremity of the Rectum; 7, Inflammation of the Rectum; 8, Ulceration of the Rectum; 9, Hæmorrhoidal Affections; 10, Enlargement of Hæmorrhoidal Veins; 11, Prolapsus of the Rectum; 12, Abscess near the Rectum; 13, Fistula in Ano; 14, Polypi of the Rectum; 15, Stricture of the Rectum; 16, Malignant Diseases of the Rectum; 17, Injuries of the Rectum; 18, Foreign Bodies in the Rectum; 19, Malformations of the Rectum; 20, Habitual Constipation.

It will thus be seen that all those diseases to which this portion of the body is subject, receive more or less attention, and the volume thus becomes a convenient *hand-book* for the general practitioner. It is proper to mention, that Mr. Ashton is not exclusively devoted to the treatment of this class of diseases, and his remarks concerning specialties are worthy of repetition.

"In past ages and in the present time, a popular idea has prevailed that a deeper knowledge of, and a more intimate acquaintance with, the diseases of any certain organ, is obtained by an exclusive consideration of that particular part; but no greater fallacy can be conceived, it being only by a comprehensive view, and after due consideration of all the symptoms produced, and the various phases presented by disordered function and organic change in the various parts of the animal economy, that a just conclusion as to the *fons et origo mali* can be arrived at."

We confess that the teachings of an author who holds such opinions have far more weight with us than those of one who considers the seat of his specialty, whether it be the eye or the rectum, or any other part, as the principal part of the man, to which all the rest of his organization is subsidiary.

Taking the book as a whole, it is sensible and judicious, the author making no attempt to dazzle by bringing forward some new treatment for any disease, and never appearing to ride a hobby. We should be glad to take up the topics of all the chapters, in succession, but must limit these remarks to a few of them.

Fissure of the anus and the lower part of the rectum, or, as some writers have called it, "irritable ulcer of the rectum," is thus spoken of:

"In the majority of cases, the lesion is confined to the mucous membrane only, but occasionally extends to the submucous cellular tissue, or even to the muscular fibres of the sphincter: the inferior extremity of the fissure is usually immediately within the margin of the external sphincter, or implicates the skin at the margin to a slight extent, but

is not unfrequently situated higher up." This fissure may become an ulcer, but the treatment and the result will be the same, though, if ulcerated, a longer time is required for a cure. If the fissure is a recent one, Mr. Ashton does not do any operation, but orders ablutions with soap and water every night and morning, the injection of half a pint of cold or tepid water after the evacuation of the bowels, and when this has been ejected, a small piece of lint, saturated with the following lotion, or one of similar properties, must be kept applied to the part:

℞.—Plumbi acetatis,	gr. x.	
Liquoris opii sedativi,	m xx.	
Aquæ sambuci,	f℥iv.	M.

Belladonna ointment (℥i. to ℥i.) to be used if there is some spasm of the sphincter. Any unnatural condition of the secretions or excretions is to be attended to, and the habits and manner of living of the patient to be corrected if faulty. If the fissure is transformed into an indolent ulcer, it is to be touched with nitrate of silver two or three times, with several days interval. The enemata and belladonna ointment to be continued. When this fails to cure, incision may be made through the ulcer, but *not* to divide the sphincter, the knife going through the mucous membrane only.

The chapter on hæmorrhoidal affections is quite full, and contains several things of interest and value. We are glad to see the proper distinction made between hæmorrhoids and enlargement of the hæmorrhoidal veins. To confound these different conditions is a very common error of the profession, and may lead, as we believe in some instances it has done, to serious results. To transfix and ligate an internal pile is a good operation, but to do the same thing to an enlarged vein—well, we would rather not do it. Then, too, the use of nitric acid for removing hæmorrhoids is thus compared with the ligature: "When the tumors are sessile, with florid granular surfaces, looking like half a strawberry, the application of it (nitric acid) is the preferable plan of treatment; but if the piles are large and pendulous, the ligature ought to be used." Three cases of perforation of the recto-vaginal septum by the use of acid for large growths have come to the author's notice. The ligature is, of course, preferred to the knife in internal piles, it being the safer mode of operating. Indeed, no one who is not exceedingly rash from conceit or ignorance, would now think of cutting off the internal tumors.

For external piles, he prefers the knife to the scissors, a *choice* which should always be made when practicable. The clean cut of the knife-

edge heals much more satisfactorily than the bruised surface left by the scissors. The chapter on fistula in ano is also an excellent one, and several points are marked for especial notice, which we are compelled to pass without comment. The remarks on habitual constipation seem to be briefer than they ought, but a careful reading of them will convince one that there is but little to be added to them. We are glad to see that Mr. Ashton, as well as other writers, commend the light wines for the use of invalids in preference to Port, Sherry, and Madeira. The dry wines of France, Germany, Spain, Portugal, Hungary, and Italy, are all of them preferable in their effects, while it is no small point to most purchasers that they may be more easily obtained pure and at a much lower rate. Before long our own country will, doubtless, produce good light wines; but at present, most of the wines are too fiery. As to the several wines of home manufacture, especially such as currant wine, we can only advise our patients to shun them. They are poor mixtures to the taste, and poorer for the stomach.

In commending this volume to the profession, we add, that it is printed in the most excellent style of the publishers. E. H. P.

Memoranda Medica; or, Note-Book of Medical Principles: Being a Concise Syllabus of Etiology, Semeiology, General Pathology, Nosology, and General Therapeutics. With a Glossary. For the Use of Students. By HENRY HARTSHORNE, A.M., M.D., Professor of Theory and Practice of Medicine in the Medical Department of Pennsylvania College; Physician to the Protestant Episcopal Hospital of Philadelphia; Fellow of the Philadelphia College of Physicians, etc. Philadelphia: J. B. Lippincott & Co. 1860.

Thus reads the rather full title-page of an unpretending little octavo of nearly 190 pages.

But its title truly indicates its nature and purpose. Its pages satisfy the object proposed. Its preparation was prompted by the long felt want of a brief, lucid, and *available* manual of *Medical Principles;* and, indeed, though modestly offered as only an *outline* or *partial substitute* for such a work, for the use of students, it presents so much positive information of medical knowledge as it is developed up to the present day, that every practicing physician, unless fresh from our best colleges, or unless he has more inclination and time for continued study than the majority of our practitioners evince, would be greatly instructed by a careful perusal, and he and his patients vastly benefited by carrying its *principles* directly into his *practice.*

The classifications of the causes of disease, of its signs and symptoms, of the circumstances as to its seat and nature, of the individual diseases, of remedies, and of the modes of treatment, are, each, logical, convenient and practical. The definitions given are, in most cases, peculiarly adequate, plain and correct; the views advanced, generally, free from theories, rigidly in accordance with ascertained facts; and the language, throughout, perspicuous and concise. Its concluding maxims are:

1. All pathology is but the physiology of organic perturbations.
2. Never interfere actively in disease without a distinct object.
3. Act only upon scientific reason, or well-defined experience.
4. Treat the cause of disease whenever it is possible.
5. Watch always, and treat when requisite, the condition of the patient.
6. Avoid, especially, routine treatment according to the names of diseases.
7. Use no violence with self-limited diseases.

I believe that a sound "theory of medicine" may be expressed in a single paragraph, thus:

Physiological optimism is the aggregate tendency of all the forces of the living organism, under the controlling influence of the vital force. But, the best possible result in a given case may, from its conditions and circumstances, fall far short of health. Medicine, then, is to favor or supply those conditions which, under natural laws, allow or promote the best result.

In aiming to fulfill this duty, the art of healing must always depend, in part, upon empirical observation, (which every branch of knowledge requires,) and in part upon inductive science. But in both alike, the physician is, or should be, "*naturæ minister et interpres.*"

As we look over its pages again, we stop to re-read, and feel tempted to make quotations from every page. But we forbear quoting more from a little volume so well worth its price, *(only One Dollar,)* that we most strongly urge every one who reads this notice, be he student or practitioner, to procure a copy for himself. We hope that the whole medical press and profession will not fail to accord to the author the appreciation he deserves, and that the promised additional practical memoranda may soon appear.

Of the character of the externals and mechanical execution, we need say nothing, after having mentioned the names of the distinguished publishers.

L. E.

MONTHLY SUMMARY OF MEDICAL JOURNALISM.

By O. C. Gibbs, M.D., Frewsburg, N. Y.

Dysentery.—In the *N. A. Medico-Chirurgical Review*, for September, Dr. H. P. Ayres, M.D., of Fort Wayne, Indiana, has an article upon the nature and treatment of dysentery. If we rightly understand the author, he believes the disease to have its origin in a specific poison, while in its nature it is essentially an inflammation.

Thus he says, "Strychnine or arsenic will produce their results in the torrid, frigid, or temperate zones; ergot will affect the strong and the weak in a similar manner; veratrum viride will produce like results on a thousand different patients, however circumstanced in relation to locality, food, water, or other causes. So is it in dysentery: there must be an agent generated or introduced into the system, possibly arising from a multiplicity of external causes; yet, whenever and wherever it is generated, a part or all of the phenomena of dysentery will appear." Does Dr. Ayers wish to be understood as saying, that where an epidemic of dysentery appears, that every person that is subject to the action of the dysentery-producing morbid agent suffers from an attack of the disease, as surely as a man would suffer from a poisonous dose of arsenic? And, conversely, that those who escape the disease have not felt the morbid agent or epidemic influence?

He says, further, "The characteristics of dysentery are the same in all countries and in all latitudes, and there must be similar causes producing such a uniformity in results. Dysentery is but the manifestation of another disease, but in point of treatment it is a distinct local inflammation. The primitive diseased part is the blood, which may have been changed from its normal condition by animal, mineral, aerial, or vegetable poisons, received through the skin, lungs, or stomach; but whenever and however it originates, it, by the law of election belonging to some diseases and medicines, invariably manifests itself in the colon and rectum."

We quote the author's concluding remarks in regard to treatment: "In 1845, we treated dysentery strictly as an inflammatory disease, using venesection and other antiphlogistic remedies; in 1854, as a subacute, in which an evacuation of the alimentary canal and astringents constituted the successful treatment; in 1856, as a subacute kept up by a morbid state of the liver, spleen, and other organs, in which cathartics were absolutely necessary. In each of these years there were instances of chronic, typhoid, and ulcerative states of dysentery, which may form the subject of another paper. Here, we think, is the reason of the great discrepancy in the treatment of dysentery: the peculiar character or type has not been sufficiently illustrated in which calomel, venesection, ipecac, opium, and the various remedies which have been and are reputed as specifics, have been successful; and yet in the hands of others have entirely failed. It is true Cullen, Sauvages, and Linnæus, have not placed it among inflammatory diseases; but, with all deference to those who differ, dysentery should have the same place in our nomenclature as pleuritis, gastritis, or metritis. In each of these the proper treatment has long been settled by the profession, but with no better reasons than would apply to dysentery. It is not necessary, in all cases of pleuritis or metritis, to bleed, or give tartar-emetic or calomel; we use such reme-

dies according to the exigencies of the case, but we always keep in mind the inflammatory character of such diseases. Just so do we think respecting dysentery. Place it among our inflammatory diseases, and the treatment will become as uniform as in pneumonia or pleuritis, which may or may not be complicated, like dysentery, with other diseases. I am aware many treat it as an inflammatory disease, and would repudiate any other treatment; but, nevertheless, the prevailing feeling with the profession is, to have a specific in dysentery, when it can alone be successfully treated on general principles."

Tracheotomy.—In the *N. A. Medico-Chirurgical Review*, for September, Dr. C. S. Fenner, of Memphis, Tennessee, has an article upon tracheotomy in croup. He reports five cases occurring in his own practice, in two of which the operation was successful, and in three a failure.

After reviewing the literature of this operation, and the history of its results, Dr. Fenner concludes his paper with the following remark: "My own opinion is, that it should never be performed except as a *dernier ressort*, when every other remedy has failed and deaths seems inevitable."

Local Treatment of Gleet.—In the *N. A. Medico-Chirurgical Review*, for September, Dr. G. P. Hachenburg, of Springfield, Ohio, has an article on the treatment of gleet by compression. He says, "The instrument which I use for this purpose is made of different sizes, and is composed of ivory, or horn highly polished, and is simply a short bougie with a button or shoulder turned at one end, to prevent it from slipping into the urethra. The following method may be observed in its use: Before its introduction, at bedtime, the urethra should be well washed out with Castile soap and water, followed by a mild astringent lotion. An instrument of a size which will well fill the urethra is then oiled, and with gentleness introduced. In a short time the passage will accurately and tenaciously grasp the instrument, and it is retained for the night without support or bandage. In the morning it is removed, followed by another cleansing process, which is repeated occasionally through the day. The application should be renewed every third or fourth night, until the cure is accomplished, which will occur after the third or sixth application. In removing the instrument in the morning, there is sometimes a difficulty in getting it out of the urethra, so firmly is it held within its grasp. A gentle rotatory movement, however, will soon disengage it, its exit being then readily accomplished by traction."

Pleuro-Pneumonia of Neat Cattle.—In many sections of the country the disease just mentioned has proved very destructive to cattle, and ruinous to many a farmer's interest. The subject should not be considered beneath the attention of the physician. The Governor of Ohio appointed a commission to investigate the subject, and one of the members of that commission, J. H. Klippart, makes a report in the August number of the *Columbus Review*. We make an extract or two. "The disease of neat cattle, called pleuro-pneumonia, has, at times, prevailed extensively in Central Europe, for several centuries." He believes the disease to have its origin in a specific poison, and that it is propagated, like small-pox, by contagion, and, consequently, he advises a separation of the sick from the well.

The most important point in Mr. Klippart's communication, if true, is that, like small-pox, the disease may be prevented by inoculation. He says, "As a prophylactic, inoculation of the tail of healthy animals, with matter taken from diseased lungs in the second stage of the disease, has been very successfully

practiced in Europe. The animals which have been properly inoculated exhibit certain characteristic symptoms, and frequently lose part of the tail, but almost always recover, and are then free from danger."

In the *Boston Medical and Surgical Journal*, for August 23d, a correspondent reports a case in which prompt relief followed the administration of *fusil oil*. The oil was first given in ten-drop doses, frequently repeated. Benefit followed each dose; two teaspoonsful were given at once. The writer says after this "I did not see her again for three hours, when she appeared completely relieved."

Poisoning with Strychnine.—In the *Lancet and Observer*, for September, Dr. H. G. Thomas, of Alliance, Ohio, reports a case in which *five grains* of strychnine were taken, and *one and three-fourth hours* elapsed before symptoms of poisoning occurred. Large doses of the sulphate of zinc were given, and the patient recovered. In this case, as in one previously referred to, we think the strychnine was not pure, or that full five grains *were not* taken. It is contrary to the usual habits of this agent to delay its action for nearly two hours. However, as the patient was a hard drinker, and took a large dose of whiskey after taking the strychnine, it is possible his stomach was not in condition favorable for absorption; or, as it is well known that one poison often counteracts the effects of another, it is possible the whiskey acted remedially; or, still, it is possible that having been long accustomed to the action of one poison, he was less sensitive to the action of another.

Bismuth in Severe Burns.—In a former number of our *Summary*, we referred to an article by Professor Richardson, in which bismuth and glycerine were strongly recommended as an application to severe burns, covered with a layer of soft cotton. In the *Lancet and Observer*, for September, Dr. W. P. Rush, of Indiana, adds his testimony in favor of the same combination. He says, "I have never used anything in cases of severe burns that gave so much satisfaction as the bismuth and glycerine, recommended by Professor Richardson." In two cases of very severe burns, in which he used it, he says, "The bismuth could not be had until the third day; but after the removal of the first application (cotton and oil) from the two surviving men, and the application of the bismuth, relief was almost immediate."

We can see one objection to this preparation in some cases: that is, its cost. We once treated an extensive burn, through a period of fourteen months, until cured, with white-lead and linseed oil.

The pecuniary circumstances of the patient and friends were not such as to enable them to pay a physician, or even to buy medicines. Gallons of the white paint were used—the same quantity of bismuth and glycerine would have been a heavy tax upon the attending physician, and we doubt whether with corresponding advantage. We have no doubt it is an excellent application; but the question is, is it better than the cheaper one of white-lead paint, which we and others have found to answer most admirably as a dressing for severe burns.

Sympathetic Ophthalmitis.—In the *Chicago Medical Journal*, for September, Dr. E. L. Holmes has an article upon the subject of sympathetic ophthalmitis. It is well known to every surgeon that where one eye is lost by intra-ocular inflammation, whether idiopathic or traumatic, the other eye frequently becomes, and is always *liable* to become inflamed. Of this sympathetic inflammation, Dr. Mackenzie says, "Whenever I see sympathetic ophthalmitis, even in its first

stage, I know that I have to contend with an affection which, however slight its present symptoms may be, is one of the most dangerous inflammations to which the organ of vision is exposed."

Against this sympathetic disease, Dr. Holmes recommends preventive treatment, which "consists in the partial or total extirpation of the injured eye, before the least symptom of inflammation has appeared in the other eye." * * "We consider it as the duty of every surgeon in those cases where vision is lost, to advise either the total or partial extirpation of the eye, before the symptoms of disease appear in the other eye. We believe it is better to pursue this course, even in a large number of cases where the sound eye might possibly have escaped, than to run the risk, in a single instance, of losing both eyes."

Treatment of Inflammations.—It may be known to most of our readers that Professor Austin Flint, in the treatment of inflammations, puts in requisition the so-called antiphlogistic measures less than the great mass of physicians. In the *American Medical Times*, for September 1st, he reports a case of pneumonia, complicated with pericarditis and dropsy, that was treated with quinine, iron, whiskey, &c., and recovered. In regard to antiplogistics, as bloodletting, purgatives, mercurials, vesication, and low diet, in reference to this particular case, he says, "Had we followed out such a plan of treatment, I do not hesitate to say that I believe we should not only have failed to save the life of our patient, but our measures would have aided the destructive tendency of the associated diseases."

A further quotation or two will show the author's views in regard to the objects of treatment. "We may assert, as an axiom in the practice of medicine, that, whenever any disease tends to destroy life by asthenia or exhaustion, the sustaining treatment is indicated, and in proportion to this tendency is it of paramount importance to employ with efficiency measures to support the powers of life. This principle takes precedence of all the therapeutical indications pertaining to particular diseases. Experience and reasoning may show that such or such diseases are often influenced favorably by such or such remedies; but whenever there is danger to life in consequence of defective power in the system to resist disease, then the means of supporting and increasing this power of resistance supersedes all others, and measures having reference to the process which constitutes the disease are contra-indicated, if they conflict with the sustaining treatment. We have remarkable examples of the power of sustaining measures in certain cases of the fevers which have a self-limited career. A patient with typhus may present symptoms which would lead us to look for death hourly, and if by means of alcohol and nutriment given without stint, and almost without limit, we can succeed in preventing the flame of life from going out for one or two days, the danger is passed, the disease has run its course, and the patient enters at once upon convalescence. The same holds good measurably with most acute inflammations. These may be said usually to have a self-limited course." * * * "In the management of acute affections of all descriptions, the physician should direct his attention, not to the disease alone, but to the patient." * * * "The measures which are directed to the local affection are often antagonistical to those which the general condition claims."

Inflammatory Affections of the Female Breasts.—In the *Chicago Medical Examiner* for September, Prof. W. H. Byford has an elaborate article, 34 pages in length, upon the subject just mentioned. Our space will not justify us in fol-

lowing Prof. Byford through the various divisions of his subject, detailing causes, &c. We can only give a brief summary of treatment. It may be well to observe in the outset, that Prof. Byford believes that cracked and excoriated nipples are more common than formerly, because the skin covering the nipple is rendered soft and tender by the extraneous covering worn by a vast majority of females in compliance with the demands of fashion. He also believes that absent and imperfect nipples are mostly the result of imprudent pressure upon the breasts by stays, and in tight lacing. Prevention is better than cure, and to this end he says, "The nipple, therefore, should be covered lightly during pregnancy and nursing. The thinner and more permeable the covering the better. It should be of such a character as freely to admit the air. At the same time it should be subjected pretty constantly to moderately rough friction. An excellent dressing for the nipple for the last two months is a rough, coarse sponge, so cut as to cover the areola, surrounded and covered loosely, but to touch every part of the nipple. Over this there should be but one thin thickness of goods, so as to allow of the evaporation of fluids as fast as secreted, and the free admission of atmospheric air." * * * "During lactation the same exposure to air and lightness of covering should be observed, and after nursing, the nipple should be wiped clean and dry before being returned under the clothing. This is a rule that should never be neglected." When cracks or abrasions of the nipple have taken place, producing much suffering at each attempt at nursing, much can be done, in aid of cure, by a judicious selection of shields. These should be so selected for individual cases as to take off pressure from the part diseased. "When the cracks are deep, it is indispensable to quick cure, that they should be closed up, and kept so until complete adhesion of their sides takes place. This may usually be done with great facility in the following manner, viz.: Press the nipple in such a way as to close the crack, and while thus holding it, apply a thick layer of collodion over the surface. We should apply the layer thickly, and have it extend some distance in every direction, so that it will keep the crack together. The collodion is not easily sucked off by the child, and if the nipple shield be used, it need not be disturbed at all until completely healed. We should watch the coat of collodion, and renew it when it seems to be becoming deficient by violence of nursing." In excoriations or ulcerations of the nipples, mucilaginous and astringent applications are indicated. Mucilage of gum-arabic, glycerine, &c., with tannin, kino, (catechu is not mentioned, and it really is the very best vegetable astringent in such cases,) sulph. zinc, nitrate of silver, &c. We give the following as a sample of his formula:

"R.—Glycerine, ℥ij.
Sodæ subborat., ℥ss.
Aquæ rosæ, ℥iss. Mix.

Use as a wash each time after nursing."

In chronic cases, he says, "The nitrate of silver has done the most good in my hands."

In the treatment of inflammation and abscess of the breast, the treatment resolves itself into preventive and curative. As an imperfect nipple is among the most common causes, it is important that any defect here should receive early attention. It is too late to remedy this when the breast is already inflamed. Previous to labor, during the months of pregnancy, is the time to give

this matter attention. Various means are spoken of by Prof. Byford for developing the nipple, but we have not space for their enumeration. We mention one not alluded to by him, nor any one else, so far as we know. In cases where the nipple is known to be absent, or but very imperfectly developed, and where it is expected such a development will soon be needed, a cup should be constructed, the cavity of which is of the shape of a model nipple; to this should be attached a stop-cock, as in the cupping-glasses, fitted to pump-exhausters. These should be frequently applied, and exhausted by means of a pump, the stop-cock turned, and worn for a time. This process, if continued for a sufficient length of time, we think will not fail in developing a nipple sufficient for all purposes of nursing.

When inflammation has commenced, he thinks the breasts should be kept emptied of milk. To do this he says, "The only proper thing for drawing the milk is the mouth." If the mouth only is used, his advice is judicious; but we are confident it is far better to let the breasts entirely alone than to adopt the harsh measures frequently resorted to to evacuate the milk. Belladonna may be applied, he says, but he does not give us the results of his experience with this agent. In fact, we think he does not sufficiently insist upon it. We have used it many times, and have never seen an inflamed breast terminate in suppuration, when we saw and commenced with the belladonna early. Generally we anticipate the inflammation; where the child is still-born, or the nipple is so defective as to prohibit its use, we commence *at once* with the belladonna, and the milk secretion is arrested. He speaks highly of "A bladder partly filled with ice and water, with a piece of flannel between it and the skin;" he says it will serve a good purpose. "Opium in large doses, so as to keep the patient very thoroughly under its influence, aids very much in arresting the secretion of milk." * * * "For internal treatment a saline cathartic every other day, and two grains of iodide of potassium every four hours, may be relied upon as materially aiding the other treatment." In some cases blood-letting and veratrum viride may be required. Dr. Byford has great faith in the last-mentioned in arresting inflammations.

When suppuration has taken place, "there can be no doubt, I think, that the earlier the matter is let out the better, for several reasons. The cavity becomes larger by allowing it to remain; it burrows through the surrounding tissues; the longer it remains, the greater the amount and duration of the irritative fever that accompanies its retention."

Typhoid Fever.—In the *Atlanta Medical and Surgical Journal* for August, Dr. V. H. Taliaferro has an article upon the subject of typhoid fever; he advances a new theory in regard to its nature, and has a few remarks upon treatment. He does not believe the disease to be essentially enteric, as regarded by many, for reasons which we have not room to state. He believes the disease to have its origin in a specific poison, and says, "Now, we beg leave to claim that this poison arises from a disturbance of the *cutaneous functions, whereby the perspiratory fluids are in part retained in the circulating mass,* poisoning and contaminating the whole, and paralyzing, as it were, the performance of the normal functions of the nervous centres, by the intensity of its action." In regard to his theory of the nature of this disease, Dr. Taliaferro says, "If objections are found to it which can be sustained, we would be glad to know them through the medical press." It seems to us that it would not be

difficult to find such objections, but we have not space at command to state them in full. We may, however, remark that, if the theory is correct in all cases where the perspiratory secretions are arrested. or materially suppressed, we should get a typhoid fever. Such is not the ordinary result, and we may state this as objection first. In the second place, we have no evidence that a disturbance in the exhalating function of the skin precedes the febrile action in any considerable number of the cases of typhoid fever. And, in the third place, if a suppression of the function of the skin is the primary pathological condition in this disease, as the sympathetic connection between the skin on the one hand, and the lungs and kidneys on the other, is more intimate than between the skin and bowels, the more constant pathological lesion should be found in the lungs or kidneys, and *not* in the glands of Peyer, as is well known to be the case.

In regard to treatment Dr. Taliaferro says, "Our remedies should be directed to the fulfillment of two important indications, viz.: the deranged condition of the cutaneous functions, and its consequent effects upon the system, embracing more particularly the nervous and circulatory systems, and the intestinal canal, with its mucous glandulæ." The first thing which he recommends is a thorough cleansing of the surface of the body "with tepid water and soap, with a *coarse towel*." This is to be repeated *every morning*. In addition to the morning washing the patient is to have "every night his *entire surface* well greased" with lard, bacon-rind, or olive oil. If lard or oil is used, "they should contain as much *salt* as they can be made to dissolve."

In regard to medicines he recommends the following:

"R.—Chlorat. potas. sat. sol., ℥viij.
Tinc. verat. viride, ℥j."

A table-spoonful of this is to be given every three or four hours, through the day only, and a dose of opium at bedtime, and the patient left undisturbed until morning. Rich food, frequently administered, with a judicious use of stimulants, he regards of the first importance. We confess that we like his treatment better than his theory.

Chloroform in Congestive Chills.—In the *Oglethorpe Medical and Surgical Journal* for July, Prof. H. L. Byrd has an article upon the treatment of congestive chills with chloroform by inhalation. On a former occasion we called attention to an article upon the same subject, by Dr. Keator, of Louisiana. The last-named gentleman introduced the chloroform into the stomach, while Prof. Byrd gives it by inhalation. He says, "My impression is that chloroform inhaled during the cold stage of fever, or in a 'congestive chill,' to the extent of making a decided impression upon the system, is perhaps the most valuable remedy known to the profession."

He says further, "With *chloroform* and *quinic ether* at hand, I predict that the heretofore fatal 'congestive chills,' which have been regarded with so much terror by the physicians of the Southwestern States, will be as easily managed as any of the milder grades of miasmatic fever."

Strychnine in Typhoid Fever.—In a clinical lecture, delivered at the *Mercy Hospital*, and reported for, and published in the *Chicago Medical Examiner*, Prof. N. S. Davis remarks upon the treatment of a bad case of typhoid fever. Quinine, alcohol, turpentine, &c., had been used, and yet the patient continued

to sink. At this juncture, in connection with the turpentine, a tea-spoonful of the following mixture was given, and directed to be repeated every four hours:

"℞.—Strychnine,	1 gr.
Nitric Acid,	ʒj.
Tinc. Opii,	ʒij.
Water,	ʒij."

From this date the patient improved rapidly. In reference to the use of Strychnine in continued fever, the doctor remarked, that in many cases between the fifth and fifteenth days, the impulse of the heart becomes weak, the voluntary muscles unsteady, the capillary circulation feeble, with an evident tendency to passive congestions in some of the internal viscera; and in such, he had seldom failed to find the remedy strikingly beneficial.

In a Review, which we prepared, of Dr. Reeves' work on Enteric Fever, and published in the MONTHLY for September, 1859, we made use of the following language: "There is one agent that Dr. Reeves has not alluded to, which, because of its peculiar adaptation to certain conditions frequently present in enteric fever, should not be passed over in silence. When there is subsultus tendinum, low, muttering delirium, and the evacuations are involuntarily discharged, all showing a complete prostration of the nervous system, there is probably no combination of medicines equal to *strychnine*, which may be beneficially combined with small doses of opium." So far as we know, we were the first to use and advise strychnine in typhoid fever, and we are glad to see that so able an authority and judicious an observer as Prof. Davis should coincide with us in opinion.

Inguinal Aneurism Cured by Digital Compression.—In the *N. O. Medical and Surgical Journal*, for September, Dr. W. C. Nichols reports the case of an inguinal aneurism cured by digital compression. The tumor was about the size of a goose-egg, situated in the right groin, above Poupart's ligament. Dr. Nichols says, "Satisfied that all pulsation in the tumor could be checked by pressing the thumb on the course of the artery, I felt assured that by securing competent assistants, the flow of blood into the aneurism could be moderated a sufficient length of time to promote the fibrination of its contents, and effect a cure." Twenty-four assistants were obtained, and "the treatment was begun by thrusting the thumb directly against the neck of the sac, so that all pulsation was speedily arrested. Morphine in full doses was given to the patient to benumb sensibility, and pressure was continued by an alternation of assistants." "After making pressure for *thirty hours*, all pulsation ceased; and within *forty hours* the cure was announced as successful; and within *fifty-four hours*, our watch over the patient was withheld." The reporter says, the aneurismal tumor has "contracted to a firm nucleus about the size of a walnut." Six months later, though the patient has undergone great muscular exertion, the cure remains complete.

Post-Partum Hæmorrhage.—In the *Charleston Medical Journal and Review*, for September, Professor T. G. Thomas has an able article upon the subject of post-partum hæmorrhage and its treatment. We have space only for a few remarks in regard to treatment. The indications to be fulfilled are the following:

"(a.) *Prevent death by syncope or exhaustion.*

(b.) *Remove aught preventing uterine contraction.*

(c.) *Force the uterine fibres to contract.*"

The means for accomplishing these indications are: "1. Throw open the windows and admit a current of air. 2. Pull the pillows from under the head. 3. Give brandy and ammonia, if necessary. 4. Let an assistant stand ready to dash cold water into the face. All this will occupy scarcely as much time as it has taken to relate it; certainly not more than a minute, if intelligent and active aids are at hand." The above means are appropriate for the fulfillment of the first indication. For the second, "Let the coat now be thrown off and the hand passed up to the fundus uteri, in spite of the cries and resistance of the patient, and frequently the entreaties of her friends. There let the fingers be moved about gently, so as to titillate the uterine fibres, and cause them to contract; then let the indication be fulfilled; let whatever defeats full contraction and closure of the uterine vessels be removed. Should it be an adherent placenta, let it be peeled off; should it be clots of blood, or these with a detached placenta, let them be scooped out; and should it even be a second child, let it be delivered. In a very trivial case of hæmorrhage, pressure on the fundus uteri, or the use of ergot, might accomplish this indication; but in a really severe case, nothing less than the means advised can be relied on.

"In accomplishing the second indication, we simultaneously accomplish the third, for no means so surely force the uterine fibres to contract as the introduction of the hand into that organ. Other means, however, of great force and certainty, must be likewise adopted. 1. Keeping one hand in utero, grasp and knead the fundus with the other. 2. Order an assistant, *while you are thus engaged*, to pour a stream of water, from about four feet above, on the uterus. 3. Still occupying the hands as above mentioned, order a full dose of ergot to be given. 4. Pass a lump of ice into the vagina, and, if necessary, the uterus. 5. Throw an enema of ice-cold water into the rectum. By a faithful application of these means, the obstetrician will, in a vast majority of cases, be gratified by success; they will generally rapidly produce full contraction, and check the flow."

Parturient Hæmorrhage.—As allied to the subject of *post-partum hæmorrhage*, just referred to, we would call attention to an able paper by the same author, Dr. T. Gaillard Thomas, in the *American Medical Times*, for Sept. 29th, upon parturient hæmorrhage. However much we might desire to give a synopsis of the lecture, our space forbids. We shall, however, quote a few remarks upon the use of the tampon in these cases. He says of the tampon, "After the seventh month of pregnancy the uterus is so large that it may contain a sufficient amount of blood to produce death, so that from this period to the completion of labor it is always attended by danger. *(I need not insist upon the gross impropriety of the employment of such a means after delivery.)* Thus, then, although the tampon might effect much for us in parturient hæmorrhage, *as a rule*, it *should not* be employed; and, in exceptional cases which demand it, should be resorted to only after *mature consideration*, and its effects be watched with very careful scrutiny. Observe these rules in using it: Never employ the tampon *from* choice when there is a possibility of a dangerous internal hæmorrhage. At full term, do not employ it after the waters have been discharged, for then the uterus will accommodate a large amount of blood. Never employ it at full term after your patient has lost a great deal of blood, or from natural feebleness of body would be endangered by even a slight

hæmorrhage. In a strong woman who has not already lost a good deal of blood, in whom the uterus is contracting well, and whose bag of waters has not been ruptured, I would not hesitate to employ it if other means failed, or from any reason I deemed them inapplicable."

We refer to these opinions of Dr. Thomas with the more pleasure, because they correspond so exactly with our own, and because we know that many are in the habit of resorting to the tampon in uterine hæmorrhage, connected with labor, particularly if premature.

In the *Western Lancet* for September, 1857, speaking of the safety and reliability of the tampon, particularly in cases of abortion, we used the following language: "First, it (the tampon) is not *reliable*, because it does not remove the cause of the hæmorrhage, which is liable to recur at each removal of the tampon; neither does it perfectly and promptly arrest hæmorrhage, for however thoroughly the vagina may be plugged, it is still capable of containing more or less blood, and often hæmorrhage will continue until the uterus is distended to the size which it had attained previous to the occurrence of the abortion. Second, it is not always safe, for, if the patient has flooded until there is imminent danger of immediate death, the cavity of the womb will not unfrequently continue to receive blood, after the introduction of the tampon, quite sufficient to greatly enhance the danger, if not to prove actually fatal." Begging pardon for this intrusion of our own previously expressed opinions, we take this occasion to say that, however valuable the tampon may be in some cases, we believe its use should be mostly excluded from the lying-in chamber.

Dr. Thomas' lecture treats of hæmorrhage of an accidental character occurring previous to delivery, and if, in such cases, the recumbent posture, the local application of cold and astringents should not prove sufficient, and should the tampon be inappropriate, he would advise that *pressure be made direct against the bleeding vessels* by evacuating the waters, and increasing the pressure, if need be, by the administration of ergot. Should hæmorrhage continue, he would "*ligate the vessels* by evacuating the uterus, and causing firm contraction."

Explanatory.—A word of explanation at this point relative to our remarks made in a former *Summary* upon some cases of prolapse of the funis, in which the postural treatment was used with success. In those remarks we were made to use ambiguous language, so that some have supposed we gave the credit of that plan of treatment to Dr. Mendenhall, of Cincinnati, instead of Dr. T. G. Thomas, of New York. If there be any of our readers who received such an impression, we wish to correct it; and therefore state at this time, that this treatment was originally suggested by Dr. Thomas in a paper read before the N. Y. Academy of Medicine, Feb. 2, 1858, and published in the transactions of that body.

Union of Strands of Hair across the Incision in Wounds of the Scalp.—In a former number of our *Summary* we called attention to the suggestion of Prof. H. A. Campbell, in regard to the union of scalp wounds by fastening opposing strands of hair across the wound. In the *Southern Medical and Surgical Journal* for September, Dr. F. M. Pitts has an article upon the same subject. In reporting a case of severe scalp wound, he says, "In shaving the scalp small tufts of hair were left on either side of the wound, at points exactly opposite, and corresponding with the places of entrance and exit of sutures, if they had been used." The tufts of hair were fastened in the following manner:

"A sufficient number of ordinary duck-shot were perforated, and the united ends of each pair of tufts passed through a shot. The shot was then grasped by a strong pair of forceps, and passed down sufficiently to unite the edges of the wound, when it was mashed firmly, and the most complete and satisfactory fastening that I have seen for wounds of the scalp was furnished. A compress and bandage were applied, and union of the wound secured by first intention."

Quinine in the Treatment of Acute Rheumatism.—In the *Atlanta Medical and Surgical Journal* for September, Prof. J. G. Westmoreland has an article upon the treatment of rheumatism. He says, "Quinine is not more certain to arrest the progress of malarial fever than it is to allay the symptoms of rheumatism." He would give quinine in from five to ten grain doses, in combination with from one to two grains of opium. He says, "Quinine, in the treatment of rheumatism, as in fever, should be given in quantities sufficient to impress the nervous system fully." Further, and more specifically, he says, "In order to insure the tonic or invigorating influence of it upon the nervous centres, sufficient to counteract the disease, the amount of fifteen or twenty, and sometimes thirty grains is required."

Inflammatory Rheumatism.—In the *Medical and Surgical Reporter* for August 25th, Dr. W. H. White has an article upon the treatment of acute rheumatism with *iodide of potassium and belladonna.* The following is his formula:

"R.—Potass. iod., ℥ij.
Tr. belladonna, ℥ij.
Aq. cinnam., q. s. ft. ℥iv. Mixture."

Of this a teaspoonful is to be given every four hours. In a case of severe character that had resisted the usual treatment, he brought it to bear, and says of its effects: "In the course of four or five days the patient was enabled to get around the house quite nimbly, though previously confined to his bed for about three weeks." In another case, in which the patient had suffered from a previous attack which had lasted for three months, the above treatment was instituted, and on the fourth day he was taking active exercise out of doors.

Dr. White does not claim this treatment to be original with himself; he says it is recommended in a paper found in the published transactions of the State Medical Society of Pennsylvania for 1858. The author's name is not given.

Oleum Chenopodii.—Dr. J. F. Meigs, in his service in the Pennsylvania Hospital, made the following clinical remarks, (see *Medical and Surgical Reporter* for August 18th:) "In cases of dyspepsia, which have resulted in chronic catarrh of the mucous membrane of the intestinal canal, and where there is complication with, or predisposition to intestinal worms, the *oleum chenopodii* I consider as one of the most valuable tonics. It seems to modify that peculiar condition of the mucous membrane which predisposes to the development of helminthæ, and to restore its tone. It may be given in doses of from 10 to 15 drops daily."

Remarks upon Arterial Murmurs and the Diagnostic Importance of these Murmurs relative to Anæmia.—In a *clinical lecture*, delivered at the *Long Island College Hospital*, and published in the *American Medical Times*, for September 15th, Prof. Austin Flint has a few remarks upon the subject just referred to, which we consider worthy of reproduction here. Prof. Flint says, "If a murmur be seated in the pulmonic artery, in an anæmic person, the proba-

bility is that it is inorganic, because, exclusive of congenital malformations, this artery is very rarely the seat of organic lesions. The coexistence of a pulmonic and an arterial murmur is also evidence of both being inorganic. How do we know that we have these two murmurs coexisting? This is a question which I believe I have not before answered, and it is one which I have not considered fully in my work on the Diseases of the Heart. We can usually settle this nice point in auscultation, by comparing the murmur as heard over the outer, and near the pulmonic artery. If a murmur heard in the second intercostal spaces, nigh to the sternum on both sides, have the same quality and pitch, the presumption is, that it is a single murmur, transmitted into both situations; but if the murmur, as heard on the two sides, differs in quality and pitch, the presumption is, that it is not a single murmur, but that there are two murmurs, one of which is aortic, and the other pulmonic; and clinical observation shows a difference in quality and pitch on the two sides to be not unfrequent. Another point relates to the second sound of the heart. We can interrogate, after a little practice, without difficulty, the second sound as produced at the aortic and pulmonic orifices separately, and distinguish the one from the other. Now, organic lesions at the aortic orifice generally, although not invariably, involve the semilunar valves, so as to impair the aortic second sound. If, therefore, we find the aortic second sound, and the pulmonic second sound, preserving their normal relation to each other, as regards intensity and quality, the presumption is, that an aortic murmur in a well-marked case of anæmia is organic. This presumption is strengthened by the absence of any enlargement of the heart, and because experience teaches us that aortic lesions generally lead, sooner or later, to cardiac enlargement.

Further evidence that murmurs at or near the external orifices are inorganic, is afforded by the coexistence of arterial murmurs in the subclavian and carotid arteries. Murmurs are often produced in these situations in anæmia, when they are not discovered near the heart. Here I wish to advert to a point concerning which, until lately, I have entertained an erroneous opinion. I refer to the quality of inorganic arterial murmurs. In my work on the diseases of the heart, I have stated that roughness is a distinctive characteristic of these murmurs. This is, I believe, the opinion generally held by experienced auscultators. An able reviewer in the *Dublin Quarterly Review*, however, has criticised my statement with regard to this point as too unqualified. Curiously enough, just before reading this reviewer, I had been led to the same conclusion by a case which came under my observation since the commencement of the present session. You will recollect the case I visited in consultation, the patient of a medical friend, in part with reference to the question whether there existed aneurism of the aorta or subclavian artery. Under the right clavicle there was a loud and distinctly rough murmur, which, naturally enough, suggested the idea of aneurism. No other signs of aneurism, however, existed. The patient was intensely anæmic, and death occurred a few days after my examination. I attended at the autopsy and brought away the heart, which I exhibited to the class, and made some remarks on the subject at that time. Both the heart and the arteries were entirely free from organic disease.

Another nice point in auscultation here suggests itself, to which I have not referred in my work on Diseases of the Heart, and which was suggested to my mind by a question made to me by a member of one of my private classes in

auscultation last winter. Suppose that we find an aortic murmur at the base of the heart, and a murmur in the carotid artery, the latter may be either transmitted from the aorta, or it may be produced within the carotid; can we determine which of these explanations is correct? We can generally do so by comparing the murmurs in the neck and at the base of the heart as respects pitch and quality of sound. A transmitted murmur preserves its pitch and quality, certainly as a rule. If, therefore, the murmur in the neck be the same murmur heard at the base of the heart, save only as regards intensity, it is transmitted; but if it differ in pitch or in quality in the situations, there are two murmurs, one produced in the aorta, and the other in the carotid."

Puerperal Fever Treated with Digitalis.—In the *American Medical Times* for Sept. 22d and 23d, Dr. Alex. Hadden, House Physician to *Bellevue Hospital*, reports two cases of puerperal fever successfully treated with digitalis. Our readers will remember that Prof. Fordyce Barker first called attention to the treatment of this disease with veratrum viride in the MONTHLY, for Nov., 1857, since which, several other physicians have adopted the same treatment.

The action of digitalis is doubtless similar to that of the veratrum viride. Upon this point, Dr. Hadden says: "The infus. digitalis was substituted for the verat. viride, because of the certainty of its action, in my hands, in cases of a different character, and without the unpleasant consequences that attend the administration of the verat. viride to the same extent." It is proper to observe that digitalis was not solely relied upon. Thus, he says: "We aimed to reduce the pulse no lower than 60, nor permitted it to rise above 80, without endeavoring to prevent it. Morphia was given, with a view to quiet pain effectually. Sulph. quinia was given when the surface of the body was cool and moist, pulse within the above range, even if under the influence of a sedative. Dr. Barker considers the quinia, given in large doses, under the above circumstances, in puerperal fever, as not only tonic, but sedative in its effects. I have verified the observation in many cases treated under my charge, and have, moreover, observed that the effects are more lasting."

Sponge Pessary.—The employment of pessaries was the subject for discussion before the Boston Society for Medical Improvement. From the report in the *Boston Medical and Surgical Journal*, for September 13th, we copy the following interesting remarks, made by one of the members: "Dr. Bigelow had seen, in a considerable number of cases, a multitude of instruments tried and thrown aside, because they failed of their object. He thought a well-adapted, proper-sized sponge made the most convenient pessary in cases of simple descent of the womb. At the subsequent meeting, Dr. Bigelow said that in corroboration of the above remarks, he had that day seen a lady who, four years ago, had tried various kinds of pessaries, under his direction, for a bad prolapse of the womb, without success, until he was fairly ashamed of putting her to so much trouble and expense. At last, he recommended the sponge pessary, which the patient had worn ever since, with perfect ease and relief. She introduces it every morning, and removes it at night. It is soft, elastic, and does not become incrusted from retention. She rolls up a flat piece of sponge, after moistening it, and introduces it by means of a cylinder of wood. In another case, the patient, a very old lady, who was troubled with great prolapsus, causing retention of urine, and often obliging her to push up the tumor before she could urinate, obtained perfect relief from the sponge pessary. Dr. Bigelow had seen more success from this form of pessary than from any other."

MONTHLY SUMMARY OF FOREIGN MEDICAL LITERATURE.

By Dr. L. Eisberg.

II. ANATOMY AND PHYSIOLOGY.

18. *Swallowing Pebble-Stones.* By W. A. Rackham. (London Lancet, August, 1860.)

19. *On Pulmonary Osmose, or Researches on Absorption and Exhalation by the Respiratory Organs.* By Dr. Louis Mandl. (Archives Générales de Médecine, July and August, 1860.)

20. *What is the Signification of the Heart's Throb?* By Joseph Maclise. (London Lancet, September, 1860.)

21. *On the Anatomy and Physiology of the Bones of the Ear and the Membrana Tympani.* By M. Bonnafont. (Revue Médicale; Gazette Médicale de Paris, August 11, 1860.)

18. An instance is related, displaying the power which nature possesses to remove from the system any foreign bodies with which it may be burdened: "In the month of August of last year, Charles B——, a child of six years old, residing in this village, swallowed within the space of a few hours the enormous number of 160 pebbles, of various shapes and sizes, the largest, at a low estimate, equaling the size of a small walnut. They weighed, as ascertained after evacuation, over seven ounces. No medicine was administered, but simply by peristaltic efforts were they ejected from the bowels. Some difficulty was experienced during their passage through the anus, the child being compelled to assist himself by using his fingers. No ill effects happened at the time; but I may add that the occurrence has left behind a relaxed condition of the sphincter ani, thereby prohibiting at times the poor child from retaining his fæces."

19. Mandl's extensive original essay being completed, we present our readers with a *résumé* of his experiments.

(*a.*) Animals breathing in water cannot live when a more or less considerable quantity of saccharine matter is dissolved therein. The substances experimented with include the true sugars, as cane sugar, beet sugar, glucose, sugar of milk, and the non-fermentescible sweet principles, as glycerine, mannite. The rapidity with which these solutions act depends on the relative quantity of the sugar in solution, the quality of the sugar, and the species and condition of the animal.

(*b.*) Experiments were made with a great number of different species of aquatic animals. They all lived much longer in solutions of cane sugar than in those of glycerine of the same strength. Thus fishes of the size of 12 to 15 centimeters [from 5 to 6 inches long] perished in a solution with the tenth part of glycerine at the end of 40 minutes, and in a solution of sugar, only at the end of four to five hours, all other circumstances being equal.

(*c.*) Very numerous experiments have demonstrated that death can be attributed neither to poisoning, nor to chemical action on the blood, nor to fermentation, nor to the absence of air, nor to the viscosity, but that it is solely and entirely due to osmose, (endosmose and exosmose,) exercised by the saccharine solutions.

(*d.*) This action goes on through all permeable membranes and especially through those of the organs of respiration. The non-fermentable saccharine principles posses an osmotic power greater than that of the true sugars; and

this explains the greater rapidity of their action. In infusorii this action goes on as in a bladder; osmose at once acts through the whole extent of their very thin integument and body; they are observed first to diminish, (exosmose,) then to swell up, (endosmose,) until they sometimes even burst; but the osmotic action going on over this whole extent is in all cases the cause of their rapid death. In animals of higher development, where the thickness of the teguments limits osmose principally to the gills, the blood is seen to thicken in the gills and circulation, to be arrested by exosmose of the liquid parts. The circulation in the lung of a frog can also be arrested over a limited space instantly with a drop of glycerine, and in a few minutes with simple syrup.

(e.) Endosmometric experiments were made with animal membranes (pericardium,) vegetable (collodion,) and mineral (unglazed porcelain,) to determine the solid constituents of the blood that pass into the saccharine liquid. It has been proved that the salts of the serum pass first, then albumen, then coloring matter.

(f.) Development is equally arrested by saccharine solutions, as was proved by the experiments made with muscular tissue macerated in saccharine solutions, and those on fecundated eggs of fishes.

(g.) Many physiological and pathological phenomena [to which we in this *Summary* can, however, but cursorily refer,] are referable to osmose exercised by saccharine solutions. Thus, the thirst excited by ingestion of sugar, which absorbs the water of the tissues with which it comes in contact; the antiseptic and preserving virtues of sugar, by the arrest of development of organisms; the digestive power of small quantities of sugar, which provoke the exosmose of gastric juice, while large quantities introduced into the blood increase its osmotic power, which explains the use of sugar in the treatment of dropsies. The abundance of glucose in all the tissues of diabetic patients explains the constant thirst, the impossibility of any serous accumulation, and perhaps, also, by arrest of circulation, the gangrene sometimes observed in such patients. The use of glycerine as a local application is also founded on its great osmotic power. Accidental local tuberculosis, the diagnosis and treatment of which differ essentially from that of "diathesical" tuberculosis, is perhaps the result of sugar being carried into the lung, [but to this subject we will devote a new paragraph, and literally translate the author's language:]

(h.) My studies on the etiology of tubercles [Mandl having previously demonstrated the fact that tubercle is not a specific product, but is produced from coagulation of secerned liquid substances of the blood,] have long led me to think that as to their origin, there are two distinct kinds of tubercles: the one depending on accident, the other on diathesis; the former constituting only a local affection, the other the symptom of a constitutional disease. Experiments actually undertaken tended to produce local accidental tubercles, by the injection into the vesicles of the lung of osmogenetic substances, and particularly of saccharine matter.

While the limited number of my experiments imposes upon me great reserve, as yet, the results obtained give me the hope of being able to prove, thus experimentally, the production of tubercles, only localized in the lung, by accidental exudation (exosmose) of plastic matters, independent of all diathesis. These experiments will be published in due time. I will here only add that they have led me back to the point of departure of the researches on osmose,

and to the accidental production of tubercles in diabetes, where all the tissues are impregnated with glucose. These labors open a new field to therapeutics. They explain the cure, spontaneous or by art, frequently occurring in tuberculous affections of the lungs, not depending on diathesis, but purely local.

20. I.—"The heart's throb cannot be caused by its systolic action. II.—The heart's throb can be caused by its diastolic motion."

21. The conclusions drawn from this article are:

(*a.*) The membrana tympani, instead of simple movements of tension and general relaxations, undergoes partial tensions and relaxations, under the influence of the petro-malleal and pyramido-stapeal muscles.

(*b.*) These two muscles form the only active agencies of the movements of the membrana tympani and the chain of bones; they are antagonists to the portion of the membrane which they draw apart.

(*c.*) This membrane can vibrate under the influence of sounds which strike upon it, but it cannot transmit them to the deeper parts of the ear without submitting to tensions and relaxations from the action of these muscles.

(*d.*) Although the integrity of the membrane is not absolutely necessary to simple audition, its lesion always entails aberration of the perception of sounds.

(*e.*) In the perforations of its anterior portions the ear is less accessible to low notes, while the contrary holds good in similar lesions of the posterior portion.

(*f.*) The bones of the tympanum are not absolutely indispensable to the mechanism of audition, provided always that the stapes is in its place.

(*g.*) The removal of the stapes, by giving passage to the liquids contained in the vestibule and the labyrinth always entails deafness, with a rapidity which corresponds with that of the flowing off of the liquid.

(*h.*) In this case the ear, if it has retained audition at all, will be sensible enough of less noise, but will have lost all aptitude to receive the simultaneous impression of several sounds.

(*i.*) The conditions necessary to a good musical ear must reside in a perfect adaptation of the malleo-tympanal articulation on the one part, the membrana tympani and the motor muscles on the other.

(*j.*) Examinations made on many distinguished singers have demonstrated that the membrana in them receives sounds equally and directly over its whole surface.

(*k.*) The oblique and very much inclined direction of this membrane in relation to the axis of the auditory canal constitutes an abnormal arrangement, which, by enfeebling audition, renders the ear quite unappreciative of certain sounds.

III.—MATERIA MEDICA AND TOXICOLOGY.

22. *On Saccharate of Colchicum.* By Dr. J. JOYEUX. (Gazette des Hôpitaux, 32, 1860.)

23. *On the Effects of Santonin.* By C. P. FALCK. (Deutsche Klinik, July 14, 1860.)

24. *On Ozonized Oils and their Medicinal Administration.* By DUGALD CAMPBELL. (London Chemist and Druggist, Feb. 15, 1860.)

25. *On Leeching.* (Froriep's Notizen, II., No. 21, 1860.)

26. *Experiments with the Corne and Demeaux Disinfectant.* By Dr. L. Abel. (Preuss. Militär Zeitung, I., 3, 1860.)

27. *On Cotyledon Umbilicus.* By Dr. Rodriques. (Gazeta Medica de Lisbon, XII., 1860.)

28. *On the Employment of Apiol against Amenorrhœa and Dysmenorrhœa.* By Dr. Joret. (Bulletin Général de Thérapeutique Méd. et Chirur., August 15, 1860.)

29. *Black Coffee against Whooping-Cough.* (Reported from L'Union Méd., 64, 1860, by Prof. Jul. Clarus, Schmidt's Jahrbücher, CVII., p. 293, September, 1860.)

30. *Use of Chloride of Iron in Purpura Hæmorrhagica.* By Pize, Devergie, &c. (Bulletin de l'Académie Impériale de Médecine; all recent French periodicals.)

31. *On the External Use of Cyanide of Potassium.* By M. Th. Roche (Journal de Médecine de Bordeaux, Feb., 1860.)

32. *Case of Poisoning by Cyanide of Potassium.* By Dr. Th. Husemann (Deutsche Klinik, 13, 1860.)

33. *Case of Poisoning by Camphor.* By Dr. Fenerly. (Journal de Chimie Médicale, June, 1860.)

34. *Case of Poisoning by Atropine.* By Dr. Roux. (Gazette des Hôpitaux 64, 1860; Journal de Chimie Méd., Sept., 1860.)

22. That colchicum is so frequently found inefficient in cases of articular rheumatism and gout, Dr. Joyeux regards as due mostly to the use of an improper preparation. He considers colchicum "as certain a specific in gout and acute articular rheumatism, as iodine in goitre, and iron in chlorosis." The best and most uniform preparations are the fresh juice rubbed up in the proportion of one to five with sugar, and dried in vacuo; or 2, an extract obtained from the fresh juice by evaporation in vacuo. The former preparation he prefers for internal use, giving, as an average dose, four grammes (℥j.) daily, in ten divided doses, while he employs the extract to rub on the painful parts. Giving such divided doses prevents all irritation of bowels and diarrhœa, which so many mistake as inseparable from the effects of the remedy. Attacks of gout so treated yield, at the latest, in two or three days; acute articular rheumatism after fourteen to twenty days. In cases of subacute rheumatism the remedy is not so efficient, though it usually gives considerable relief.

23. From a rather lengthy article detailing experiments made by the author and one of his students in 1858, on themselves, dogs, rabbits, &c., we extract only as one of the conclusions arrived at, that santonin and santonate of soda has a very remarkable narcotic effect, causing incoherence of ideas and chromatopsy. To produce the latter, a larger dose is required. It is sure to occur in an adult from six to seven grains.

24. The discovery of ozone is due to Schönbein, who, about fifteen years ago first drew attention to some of the peculiar properties of this substance, which has been an object of increasing interest both to the chemist and physiologist since that time. Its natural presence in small quantities in the atmosphere has been proved to be highly beneficial to the human system, and indeed it is now generally regarded as an active form of oxygen, an element intimately connected with the economy of life. It was not, therefore, without reasonable hope

that it was supposed it might have some remedial effects if medicinally administered in a definite and graduated manner. The idea was strengthened by its having been observed to have remarkable effects upon organic structures, and especially upon dead blood. Mr. Dugald Campbell, the analytical chemist to the Consumption Hospital, who was the first to notice these effects of ozone, suggested that its administration might possibly be effected through the medium of oils. He believed that in case of phthisis, or consumption, and other morbid conditions in which it is of the utmost consequence to lower the pulse, without at the same time reducing the power of the patient, the use of ozonized oils might prove beneficial, and he consequently prepared a quantity of cod-liver oil, which the late physician to the Hospital for Consumption, Dr. Theophilus Thompson, undertook to experiment with. This he did, as did also his friend Dr. Scott Alison, and the results are now before us. It appears that the reduction of the pulse was usually observable in two or three days, and was often progressively maintained for a considerable period. A reduction of twenty beats in some cases was observed to occur respectively in two, three, four, and six days; in other instances a reduction of twenty-four pulsations was noted in fourteen days, thirty-four in thirteen, thirty-six in twenty-two, and forty in eleven days. In Dr. Alison's experiments a reduction of twenty beats occurred, which he describes as not referable to any other cause than that of the administration of ozonized oil, and observes that he attaches some importance to this statement, as he prescribed the oil totally divested of all prejudice in its favor. He concludes that in reducing the rapidity of the circulation ozonized oil possesses a most valuable property, rendered still more so by its contributing at the same time to improve the general health. The general conclusions of Dr. Thompson on the use of ozonized oils are not less satisfactory. He states that it is difficult to review the history of his experiments without being impressed with the conviction that the administration of ozonized oil has a remarkable tendency to reduce the frequency of the pulse, and that although additions to our list of medicines are not generally to be desired, yet that this preparation has more than a common claim to consideration; a general improvement of the patient's condition being apparently in all cases associated with its use.

25. The simplest and most efficient way to make a leech bite is, after having well cleansed and rubbed over with sweet cream the spot to be leeched, to moisten the back of the leech with wine immediately before applying.

26. We can dispose of this exceedingly elaborate and well-written article by saying, that after the most thorough practical trials of the mixture of plaster of Paris and coal-tar, lately so highly recommended in Europe, the author is forced to pronounce the verdict of "inconvenient," "disagreeable," and "inefficient."

27. Five remarkable cases of cure of epilepsy are briefly and without much scientific precision related. From these the conclusion may, however, be drawn that the fresh juice of the cotyledon umbilicus (or navel-wort, a plant growing in Europe on old walls and rocks,) may be given in teaspoonful doses two or three times a day, without fear of danger; and that its continued administration for several months may be useful in certain epileptiform and hysterical affections.

28. Apiol, i. e., Parsley Oil, is best administered in gelatinous capsules, each containing 25 centigrammes, (about 4 grains.) One capsule is given every

morning and evening during the whole menstrual period, (for 4 or 5 days,) which treatment, if necessary, is repeated at the two or three next menstrual periods. As the conclusion of his article, Dr. Joret lays down the following propositions:

(1.) The treatment of amenorrhœa and dysmenorrhœa must be varied according to the causes which give rise to the disease.

(2.) Whatever medication be adopted, it should be employed only at the precise time for the return of the menses, which is indicated by the spontaneous congestion of the uterus, and is generally easily recognized from its accompanying phenomena.

(3) When amenorrhœa or dysmenorrhœa depend upon a diminution, excess or perversion of the vitality of the uterus, with local or general neurosis, apiol, administered according to the rules we have laid down, is the best and most certain emmenagogue. It is the excitor and regulator of menstruation. It can always be used without danger, (not interfering with pregnancy.)

29. In an article filled with a mass of unnecessary and irrelevant observations, G. states that he thinks very little of medicines in whooping-cough, but that he has seen cures in a few days follow the use of flesh diet and strong black coffee.

30. The discussion on this subject in the French Academy of Medicine, which soon merged into an unrefreshing one between so-called vitalists, organicists and chemists, was not concluded until August 4th. There can be no doubt of the value of the remedy.

31. The author's conclusion is, that the solution of two to three decigrammes of cyanide of potassium, in thirty grammes of water, (gr. ij.—iij. ad. ℥v.) locally applied, cures neuralgia, if it is *superficial and localized.*

He also concludes that the remedy does not act by refrigeration, nor by rubefaction, vesication, or pulmonary absorption of the cyanic vapors, but by cutaneous absorption of the salts in the state of cyanide, or free hydrocyanic acid.

32. A young man, æt. 21 years, in perfect health, drank by mistake a large mouthful of a solution of Cyanuret of Potassium prepared for photographic purposes. He fell down, insensible, almost instantaneously, and only regained consciousness a few minutes later, after spontaneous vomiting. Twenty minutes afterwards the author found him sitting in a chair, conscious, and able, though somewhat unconnectedly, to answer the questions put to him. He complained of continued giddiness, confusion in functions of sensorium, buzzing in the ears, sense of great coldness, impossibility to rise up without falling, difficult and rattling respirations. The mouth was found open; face cyanotic; eyes staring, very shining and injected; pupil dilated; temperature of the skin, especially of the extremities, very low; tongue cold; impulse of heart, as well as pulse at the wrist, almost imperceptible and intermittent; incomplete anæsthesia to external touch; no convulsions. Smell of prussic acid was not perceived proceeding from the mouth or breath, nor had it been noticed before by the persons around him. An emetic removed only a small quantity of liquid containing hydrocyanic acid. Spirits of ammonia and chlorine water, administered internally and by inhalation, were used, with the effect of inducing a gentle perspiration, after about three hours, and complete removal of anæsthesia and sensation of coldness. Two days later all effects of the poison had passed off.

33. A woman, æt. 36 years, mother of 5 children, in the 4th month of preg-

nancy, took 12 grains of camphor to produce abortion. For two hours she was intoxicated; she had headache, redness of face, burning sensation in the stomach; after 8 hours, increasing pain in epigastrium, extending to the loins, diffused also through the whole abdomen; strangury, excessive anxiety, vomiting. Three days later Dr. F. found her in the following condition: Face pale, bluish; eyes hollow; skin cold, and unsensitive; pulse small, and thready; heart's impulse weak, and slow; respiration difficult; voice weak; abdomen intensely painful to the touch; violent cramps of the extremities; micturition suppressed for 24 hours; bladder therefore excessively full; coma; slight discharge of blood from the vagina; os uteri widened, very hot. The patient lived three days longer, and aborted on the evening before her death. No account is given of an autopsy.

34. A woman, æt. 30 years, in the 5th month of pregnancy, took a solution of about 9 centigrammes [1⅔ grs.] of atropine in water, alcohol, and acetic acid. Roux found only a line of iris; sight not entirely gone, but objects were seen reddish colored, and as through a thick veil; nausea, and after administration of warm water, abundant vomiting, confusion, inclination to sleep, coldness, formication, and cramps of the extremities. Pulse weak, small, 150. Ordered strong coffee, cold to the temples, sinapisms to extremities, and small injections of coffee. At noon, a few hours later, considerable restlessness and delirium, complete unconsciousness, beginning trismus, swallowing quite easy, however; tenesmus frequent; inclination to urinate; urine clear and transparent. Ordered iodide of potassium, 1 gramme. [nearly 15½ grs.] with iodine, 10 centigrammes [about 1½ grs.] in 400 grammes water, [nearly 13 oz.,] a cupful to be taken every half hour, alternating with coffee internally, and by injection, and cold affusion to the face. The delirium and restlessness soon decreased; no thirst; tongue red and dry; pulse 110. At six o'clock in the evening, rest and inclination to sleep, without sleep; ideas still unconnected. On the following day, pupil still greatly dilated; vision reddish, tinted and indistinct; great weakness and pallor; slight diarrhœa; consciousness entirely returned. Examination of the morning's urine showed presence of atropine. Patient gradually entirely recovered.

IV.—PATHOLOGY, THERAPEUTICS AND CLINICAL MEDICINE.

35. *Case of Spontaneous or Primary Softening of the Heart.* By Dr. E. Wagner. (Archiv. der Heilkunde, I., 2. 1860, p. 185.)

36. *On the Difficulties that attend the Diagnosis of the Nervous Affections known as Intermittent Tetanus, Tetanille, Idiopathic Muscular Spasms, &c.* By M. Trousseau. (Medical Circular, Aug. 1 and 8, 1860.)

37. *On Typhlitis and Perityphlitis.* By Dr. Munchmeyer. (Deutsche Klinik, 5–10, 1860.

38. *On Hepatic Colic.* By M. Trousseau. (Gazette des Hôpitaux. 37, 1860.)

39. *Acute Atrophy of the Liver.* By Prof. Oppolzer. (Spital's Zeitung, 6–9, 1860.)

40. *Two Cases of Degeneration of the Kidney from Prof. Traube's Clinique.* By Dr. Ph. Munk. (Deutsche Klinik, 10, 1860.)

41. *On the Diagnosis of Cancer of the Kidney.* By Dr. Max Doderlein. (Zur Diagnose der Krebsgeschwülste in rechten Hypochondrium insbesondere der Niere und Nebeniere. 8vo. Erlangen, 1860.)

42. *The Geographical Occurrence of Diabetes.* By Dr. A. Hirsch. (Handbuch für Histor. Geogr. Pathologie; Froriep's Notizen. II., No. 22, 1860.)

43. *On the Treatment of Drunkenness.* By Dr. Le Cœur. (Revue de Thérapeutique Médico-Chirurgicale. No. 15, August, 1860.)

44. *The Treatment of Delirium Tremens by Large Doses of Digitalis.* By G. M. Jones. (Medical Times and Gazette, Sept. 29, 1860.) *Heroic Doses of Digitalis in Nervous Excitement.* By A. Wynn Williams, M.D. (Med. Times and Gazette, Oct. 6, 1860.)

45. *Analysis of Six Cases of Diphtheria.* By Thos. Gibson, M.D. (Medical Circular. August 1, 1860.)

46. *The Nature and Treatment of Gout.* By Alfred Baring Garrod, M.D. (Review of his Work in Edinburgh Medical Journal, July, 1860.)

35. This, the author relates as a unique case in his observation, and, indeed, in the literature of the subject. The substance of the heart of a male infant, æt. sixteen days, was found entirely softened, without fatty degeneration, decomposition, or other assignable cause. The mother had died of puerperal fever.

36. A case of idiopathic muscular spasms presenting at the Hôtel Dieu, Trousseau took occasion to make a few apropos remarks on this singular affection. As an important diagnostic means, he mentions the circumstance, by chance discovered by himself, that contraction of any member may be produced at pleasure by compressing the origin of the nerves that go to it. Among the predisposing causes, he mentions obstinate diarrhœa and nursing; among the exciting, atmospheric impressions, as by cold and wet. The prognosis is generally favorable. The disease may last from ten days to two or three months. As to its nature, it should be ranked with epilepsy, hysteria, eclampsia and catalepsy. There are no serious lesions of the brain or spinal marrow. Trousseau's opinion is, that this neurosis is rheumatic. Bleeding from the arm and cupping along the spine, and quinine internally, are the main therapeutic agents. "Inhaling chloroform during the attack is occasionally of some benefit; and thanks to this anæsthetic agent, though the rigidity disappears only to return a little after, some amelioration is always the result. Opium and belladonna, in moderate doses, are medicines the good effects of which I must also mention, though they do not in the least diminish the value of venesection and sulphate of quinine, which maintain their right to the best place."

37. Dr. Münchmeyer discusses in several able articles, forming a particularly valuable monograph—dilatation of the cœcum, inflammation of the cœcum and its appendages, cœcal ulceration, inflammation of the neighboring cellular tissue, and its consequences, in rather extensive details as to cause, character, and treatment.

Accumulation of fæculent matter may easily induce abnormal *dilatation* of the cœcum. Cause: inactive mode of life, and use of food difficult of digestion. Its occurrence is favored by pressure upon the transverse colon from stays or belts, and other circumstances interfering with the passage of the fæces. Distinguished from inflammation, &c., by absence of heat and violent pain in the region of the cœcum, increased on pressure and motion, and frequently by presence of pain in the right leg. Though evacuation may, in the beginning, not be

entirely wanting, the fæces are scanty and hard, alternating with diarrhœic discharges.

Typhlitis occurs hardly ever without previous dilatation. The cause of inflammation supervening, not seldom, is cold, especially from cold drinks; or in other cases, puerperal disorder. In both of these cases, it is acute; in others, coming on more gradually. The symptoms are far more violent than those of dilatation, though similar locally. There is continued severe pain, very much increased on pressure or motion of the body. Great heat, and a circumscribed, somewhat movable tumor can be perceived on external examination. Violent fever and gastric disturbance also soon appear. Unless the inflammation is subdued, it extends to other portions of intestine and to the peritoneum, or, by closure of the ileo-cœcal valve, causes ileus. In the most favorable case, the local phenomena disappear with abundant perspiration and defecation. The irritation of obstructed, hardened fæces, continuing, *ulceration* may be added to inflammation. At first, without characteristic symptom, the passage of a little muco-bloody, purulent matter, generally soon points it out. The sound observed on percussing the tumor is also generally peculiar and indicative. Cases terminating favorably are known by the fever abating, critical sweats, and excretion of urine returning at certain hours daily, the gastric difficulties disappearing, and yellowish mucoid, and afterwards pappy discharges from the bowels, besides improvement of the local phenomena. Perforation is attended with the well-known phenomena, as of other portions of the bowels.

Perityphlitis is either a consequence of dilatation and typhlitis, or occurs after general diseases, with a tendency to localization of inflammatory processes, as rheumatic, catarrhal, erysipelatous and puerperal fever. In the latter cases, too, previous obstinate constipation forms a predisposing cause. The pain and tumefaction are diffused over a larger space than in typhlitis, frequently extending over the whole right half of the abdomen. The pain is more superficial, and either of a colicky or rheumatic nature. Gradually the pain becomes more limited in extent, but increased in severity, now soon rendering voluntary motion of the leg or toleration of pressure in the right iliac region impossible. A hard, immovable tumor may also then be perceived, &c. Secondary perityphlitis is caused by extension of inflammation from the cœcum, and is known by the uniform diffusion of the tumefaction in all directions. Termination by resolution is possible in even the most acute cases, but suppuration occurs frequently.

In the *treatment* of all these affections, evacuation of the bowel is required, but the manner of accomplishing this and accompanying treatment must be different according to the circumstances of each case. Where there is great dilatation with irremovable obstruction, the only means is the establishment of an artificial anus. In cases of typhlitis and perityphlitis, castor oil and calomel may judiciously be employed in addition to enemata; which latter are continued while the painful tumefaction lasts. As soon as perforation is revealed purgatives must, of course, be discontinued. Abstractions of blood, general and more especially local, may prove of decided benefit, particularly in the beginning, and may be resorted to even when ulcerative action has set in, provided plainly inflammatory symptoms continue. Its effect is aided by warm, or, in violent cases, cold local applications. In cases of ulcers the very strictest rest and diet must be recommended, with calomel in ¼-½ grain doses two or three times daily, and emulsions; as well as blistering in the region of the

cœcum kept up for some time. During convalescence astringents may be used. If perforation takes place, the main medication is to prevent peristaltic motion, and a half to even one grain of opium may be given every half hour at first, afterwards less frequently, but still keeping up its action till pressure produces no longer pain. Mere ulceration does not indicate opium, but sudden occurrence of circumscribed peritonitis does. In cases of opening of perityphlitic abscess into the bowel, it is irrational to give opium, as the evacuation of pus is to be favored. Continued poulticing is of the most advantage in such cases. Abscesses of moderate extent may frequently be resolved by blistering; otherwise early evacuation is recommended. In absence of fluctuation, the spot is to be chosen for opening that is most painful to the touch.

Now, though the author has not advanced anything that was not previously known, a perusal of his article cannot but give clear and true notions on a subject frequently badly, or not at all, understood.

38. Characteristic of hepatic colic are: (1.) Sudden appearance of the pain in the region of the liver or stomach, its lasting several hours, and returning at uncertain times, and its dependence on eating. (2.) The nausea and vomiting of matter not biliary. (3.) The appearance of jaundice soon after, and the discharge of biliary calculi by the bowels. If the calculus is in the choledoch duct the attack lasts a shorter time, and vomiting occurs more rarely than when seated in the gall-bladder and the cystic duct.

As to treatment, there is no remedy that can dissolve the calculus, but it commonly easily passes under the use of Karlsbad, Vichy, and other waters. The main indication in the cure is abundant bodily exercise, united with a diet of fresh vegetables, and avoiding fat. Besides regulating these matters, the author prescribes Ol. Terebinth, in *Le Huby's* capsules, (2 parts of turpentine with 1 of ether,) from 4 to 12 during each meal, to be continued for months.

During the attack, chloroform, belladonna, and prolonged baths, are recommended as most useful.

39. An *almost* pathognomonic sign is the presence of leucin and tyrosin in the urine, with great decrease of urea. Carbonate of ammonia was also constantly met with in the cases in which the urine was examined. The author regards acute atrophy essentially an inflammatory process, but does not deny its occurrence from other disorders of nutrition; thus he found it once after emboly of the hepatic artery. The etiology is unknown; middle age, female sex, mental excitement, pregnancy and parturition seem to be relatively predisposing circumstances. The prognosis, whenever a large portion of the liver is affected, is highly unfavorable; with more limited disease, a stoppage of morbid action is possible.

The *treatment* may in the beginning, *i. e.*, before the diminution in size is plainly demonstrable, consist of local abstraction of blood and mild laxatives; afterwards it can only be directed against urgent symptoms; excitation may be treated with cold to the head and opium; depression with excitants, &c.

40. One was a case of amyloid degeneration after tuberculosis; the other of enlargement of the cortical and shrinking of the pyramidal portion, with atrophy of the heart. To transcribe the report of these cases in all their interesting detail would carry us beyond the limits of this *Summary;* but we would direct the attention of our readers to the important point in relation to diagno-

sis that the urine, which is ordinarily yellowish in fever, becomes still more scanty, darker, and specifically heavier in fever when amyloid degeneration of the kidney is present; while it always remains pale in fever when the shrinking referred to exists. *Traube* has also constantly found amyloid degeneration of the kidney in cases of tubercular disease in which dropsy and albumen in the urine had occurred.

41. Cancer of the kidney is known from the position of the tumor, the functional phenomena of the kidney, secondary affections of other organs, constitutional symptoms, and the duration and origin of the disease. The two most important phenomena in a diagnostic point of view being the peculiar swelling and hæmaturia, the following are the main symptomatic forms of the disease:

(1.) Cancer of the kidney, without tumor and without hæmaturia. *Very rare.*

(2.) Cancer of the kidney with hæmaturia, without tumor. Even where no tumor can be made out, the disease can be diagnosed from the existence of hæmaturia, when its source is not in the bladder or urethra, when it is persistent or of frequent return, (*abundant* hæmaturia is neither necessary nor common,) when no gravel or stones are passed, when there are no signs of renal colic nor of suppuration in the kidney, especially no violent fever and pus in the urine, when cachexia pre-existed or soon makes its appearance, when cancer can be proved to exist in other organs.

(3.) Cancer of the kidney with tumor, without hæmaturia. In such a case the diagnosis may be made out from the peculiarities of the tumor: absence of œdema of the skin over it, from the phenomena of cachexia; absence, or at least, moderate and temporary appearance of fever, from the rapid enormous emaciation, with fatal issue in a year's time. The consequences of the closure of the inferior vena cava: the established presence of cancer in other organs, previous cancer of the testes, absence of uremia.

(4.) Cancer of the kidney with tumor and hæmaturia. In such a case, the diagnosis is most probable and least difficult.

42. According to Hirsch, diabetes occurs most frequently where the inhabitants live principally or exclusively on vegetable food.

43. Le Cœur restricts the value of acetate of ammonia to the drunkenness induced by liquors containing a certain quantity of acid, as Bordeaux wine, champagne, &c., and speaks extremely favorable of common refined lump sugar, in indefinite moderate quantities, as a powerful remedy in especiallly the beginning phenomena of intoxication by alcohol and its derivatives. [Space forbids us following the author's speculations on the *modus operandi* of this certainly harmless, and, according to him, very efficient remedy; nor can we even refer to the cases, interesting from many other points of view, besides illustrating his treatment, which he ably details. We cannot, however, leave the subject without yet calling the attention of our readers to the decoction of asarabacca, *Asarum Europæum*, recommended some time ago by SMIRNOFF, of the use of which in the disordered condition of the prima via and nervous system of drunkards, we have recently had several proofs.]

44. During the last twelve years the author has treated with digitalis at least 70 cases of delirium tremens. In at least 67, no other medicine was used; 66 recovered; and in the case lost—the only one in the 12 years—there was "a tumor in the brain." The dose recommended is *half an ounce* of the tincture

given in a little water. "In some few cases, this one dose is enough, but generally a second dose is required four hours after the first. In some cases, but very seldom, a third dose is called for; but this hardly ever need exceed two drachms. The largest quantity I have ever given was *half an ounce* at first, *half an ounce* four hours afterwards, and another *half an ounce* six hours after that—making an ounce and a half in ten hours. As to the effects of these doses, my impression is that the action is on the brain, not on the heart. The pulse, so far from being lowered in force, becomes fuller and stronger, and more regular, soon after the first dose. The cold, clammy perspiration passes off, and the skin becomes warmer. As soon as the remedy produces its full effect, sleep for five, six or seven hours commonly follows; sleep is the guide as to the repetition of the dose. No action on the kidneys is evidenced by any unusual secretion of urine. Sometimes the bowels are slightly acted on, but not commonly. I have never once seen any alarming symptom follow the use of these large doses of digitalis."

Dr. Williams has averted impending paroxysms of epilepsy by a half-ounce dose of tinct. of digitalis, and recommends it for trial, also, in puerperal convulsions.

45. (1.) M. A., female, aged six years; duration of disease, three weeks; recovery.

(2.) W. B., male, thirty-seven years of age; ill nine days; recovery.

(3.) S. A., aged eleven years; observed six hours; died.

(4.) A. S., male, aged eighteen months; ill one month; the exudation on the fauces, &c., recurring during the last week of the illness, and resulting in death, with symptoms of cramp.

(5.) Aged thirteen years, female; observed twenty-four hours; death resulted as in the former case, with similar symptoms.

(6.) Aged seven years, male; observed for three weeks; recovery.

All the above cases put on the same symptoms, corresponding exactly in the nature of the exudation and the affection of the respiratory apparatus, with a decided tendency to coma in the fatal cases.

No. 1. The patient expectorated large quantities of tubulated false membrane, and with great relief, the paroxysms uniformly abating in intensity, and the cerebral symptoms mitigating. The treatment pursued was a mixture of the stimulating with the antiphlogistic, with a liberal supply of port-wine, with beef-tea, alternating when the exudation was more than usual in quantity, and when the breathing was oppressed, with an emetic of the tartarized antimony, inhalation of steam, purgative doses of calomel, &c., penciling twice daily the fauces with tr. ferri mur., ʒij., aq. puræ ad ʒss., and the administration of a mixture composed of nitro-muriatic acid in bitter infusion. In Nos. 2. 4, and 6, the same treatment was adopted with beneficial effects, except in No. 4, which, owing to the relapse, and the great difficulty of effectually sponging the throat of young children, unfortunately terminated fatally.

As a rule in this country, I find, on inquiries rigidly made, that when the patients have been seen by the medical attendant early, and treated on this principle, they have uniformly done well; but very often the patients themselves have not observed any serious illness until the disease had so far advanced as to be beyond the reach of medical aid; for when the fauces have been in an

aphthous condition for a length of time, the system gives way, and every attempt is rendered futile by the croupy respiration and the speedy death of the patient, which not unfrequently is preceded by convulsions, owing to the non-arterialization of the blood in the lungs. In cases Nos. 3 and 5 the unfortunate patients were in that condition. I hold that diphtheria requires support at the very commencement; and in this the treatment differs from scarlatina, which will not bear this kind of treatment until the fever is subdued.

46. According to Dr. Garrod, gout depends on, or at least is to a great extent associated with, an impairment of the uric-acid secreting function of the kidneys. There is less uric acid found in the urine; and an excess in the blood, the quantity in the latter appearing to vary from 0.025 to 0.175 grains in 1,000 grains of the serum, not making allowance for the loss which Dr. G. finds always takes place by decomposition and other causes.

The "*uric-acid thread experiment*," which brings the analysis within easy reach of the ordinary practitioner, is important. "Take from one to two fluid drachms of the serum of blood, and put it into a flattened glass dish or capsule; those I prefer are about three inches in diameter, and one-third of an inch in depth, which can be readily procured at any glass-house; to this add ordinary strong acetic acid, in the proportion of six minims to each fluid drachm of serum, which usually causes the evolution of a few bubbles of gas. When the fluids are well mixed, introduce a very fine thread, consisting of from one to three ultimate fibres, about an inch in length, from a piece of unwashed huckaback, or other linen fabric, which should be depressed by means of a small rod, as a probe or point of a pencil. The glass should then be put aside in a moderately warm place, until the serum is quite set, and almost dry; the mantel piece in a room of the ordinary temperature, or a book-case answers very well, the time varying from twenty-four to forty-eight hours, depending on the warmth and dryness of the atmosphere." Whenever uric acid crystallizes on the thread it is, according to the author, present in not less than 0.025 grains in 1,000 grains of serum; that is, in decidedly abnormal quantity. The absence of delicacy, above a certain degree, in the test thus becomes one of its most valuable attributes. Uric acid may also be obtained from the serum of blisters, and the cutaneous secretions of the gouty by means of the uric-acid thread experiment.

In rheumatism, the results by the thread experiment were uniformly negative. Rheumatism and gout are totally distinct diseases, not often associated, nor to be confounded with each other; the name "rheumatic gout" being in reality only a name for ignorance or imperfect information. In doubtful cases, the uric acid test may be substituted to a great degree for the imperfect means of diagnosis at present existing, introducing clearness where there is at present confusion.

As to treatment, Dr. G. recommends in the acute attack "a strict antiphlogistic diet," with abundant diluents; purgatives in great moderation, saline diuretics and diaphoretics, with moderate doses of colchicum in sthenic cases, and perhaps the abstraction of *a few ounces only* of blood, after the method of Dr. Gairdner.

The chief novelty in Dr. G's treatment of chronic gout is the use of the carbonate and bicarbonate of lithia, which has "a remarkable power of imparting solubility to uric acid." It has also a much greater neutralizing power with

respect to free acids in general than potash or soda—a power dependent upon the low atomic equivalent of lithia, not exceeding seven on the hydrogen scale. He recommends it to be used in the form of a supercarbonate or aerated lithia water.

EDITORIAL AND MISCELLANEOUS.

Editorial Correspondence.

Nitrate of Potash in Certain Diseases. By A. Lane, M.D., R. N., Mahone Bay, Nova Scotia. Sir—Having discovered some years ago that the nitrate of potash possessed a peculiar power in the cure of certain diseases, I communicated the same to the Medical Inspector General of her Majesty's Hospitals and Fleets, and also to a Medical Society in Switzerland. I now wish to put you in possession of it, and request you to give it a fair trial, and also to communicate it to all your brother physicians, so that if it is of any value it may be universally known. In all cases of small-pox, scarlatina, erysipelas, *et hoc genus omne*, acute rheumatism, arthritis, and all febrile affections, I have used it successfully. I first, if necessary, open the bowels with the croton oil mixture; I then give ten grains of the pure nitrate of potash every two hours in some cold water. I give cold water for drink, each quart containing two drachms of the potash; drink *ad libitum*. I keep the patient perfectly quiet with the muriate of morphine. The potash is rapidly absorbed, and as soon as the system is saturated with it, the disease gives way to its influence; its action must be kept up until all the most prominent symptoms vanish; of course the physician must be guided, in other respects, by the peculiar habit and idiosyncrasies of his patient. In conclusion, I can only say my practice has been most successful.

A New Operation for Amputation of the Foot. By George Mann, M. D., Newfane, N. Y. I noticed in your September No. an article from Dr. A. P. Smith, taken from the *Maryland and Virginia Medical Journal*, recommending a new operation on the foot, viz., that of cutting through the metatarsal bones instead of disarticulating, as usually recommended.

It particularly attracted my attention, having assisted Dr. A. M. Helmer, of Lockport, N. Y., perform this operation in July last, with perfect success. Up to that period, we had never seen or heard of the operation. Dr. Helmer had occasion to make an amputation above the digital extremities of the metatarsal bones; it was determined to save as much of the arch of the foot as possible, consequently he sawed through the bones about one-quarter their length above the

digital extremities, cutting the first and fifth a little shorter than the rest, thereby leaving a slightly convex surface. This plan enabled him to cover the stump with a generous flap, which healed kindly, and the patient, a man aged about forty years, an inmate of the Niagara County poor-house, is now able to walk nearly or quite as well as in many instances where the entire bone is left.

Why has so simple, and, in my estimation, so judicious an operation, not been recommended before?

Ligatures Retained after Operations. By GEO. W. MANTER, Auburn, N. H. In the February No. of the MONTHLY it is stated in the *Summary* that Dr. Elsworth had repeatedly ligated arteries with the common silk ligature, had cut them close, closed the wound which had healed by first intention, and that he had never seen any disturbance result from the retained ligature. The question is asked if any of the readers of the MONTHLY have had similar experience. I for one have had some experience upon this point, and it accords with that of Dr. Elsworth.

In 1854, while amputating a limb below the knee, I found an artery about the size of a small quill, in the tibia, a fourth of an inch from the surface, and at the upper portion of the lower third of the bone. I ligated it with common silk, and cut close.

In operations such as amputations of the metatarsal bone, I have ligated arteries in the same manner. In bad cuts, also, where arteries are divided, and I desire to have the wound heal by first intention, I tie the arteries with the common silk ligature, cut close to the knot, and close the wound. The silver ligature may be better in some respects, but its shape is somewhat irregular, and it may not adapt itself to the soft parts as well as silk.

Account of the Poisoning of Thenard by Corrosive Sublimate.—M. Flourens read an interesting Éloge on Thenard, before the Academy of Sciences, January 30, 1860. We find in it the following account of the sangfroid of Thenard, when he had accidentally taken a large quantity of corrosive sublimate, and of the excitement incident to the occasion:

"During a lecture at the Polytechnic School, it happened, one day, that something necessary for the demonstration was wanting. Thenard called for it impatiently, and while the assistant ran with all his might to procure it, the professor, by way of passing the time, put his hand on a tumbler and raised it to his lips without examination. Having taken two swallows, he placed it on the table. Gentlemen, he said with sangfroid, I have poisoned myself. An electric shock was imme-

diately felt, and the faces of all became pale. Thenard stated that it was corrosive sublimate which he had swallowed, adding white of egg will combat its effects: "will some one get me some eggs?" Scarcely had this sentence escaped him, when the doors and windows were not wide enough—they ran, they pitched headlong—the storehouses are forced open, the kitchens likewise—but no eggs; the neighborhood, being put under contribution, was soon pillaged; each brought his share, and a mountain of eggs was reared. In the mean time a student flew to the Faculty of Medicine. Interrupting an examination, he cried: "A doctor! Thenard has poisoned himself in the school while delivering his lecture." Dupuytren arose. "Do you understand?" he said, and ran out; a cabriolet is in the way—he mounts—whips the horses—arrives—leaps to the ground. However, thanks to the albumen, Thenard was already saved; but Dupuytren required the employment of the pump, so as to be sure that the stomach might not absorb any corrosive substance. The organ becomes inflamed; and, safe from the poison, Thenard is put in danger by the remedy."

"Thenard was carried home. There, all the doors were guarded; the students of all the schools united to surround the house with triple ramparts; advance sentinels were detached to keep off the troublesome; silent and mournful all awaited the news transmitted from within, where the most fitted were scarcely able to restrain their zeal; in the sincerity of their affection, they envied the privileges of the family. Day and night watch was kept without intermission, without fatigue, for this man, who swayed the whole realm of kindness, was the property of the youth, and they wished to save him. Every morning, accurate bulletins were affixed on all the large establishments; no one knew their authors. When Thenard reappeared in his chair at the Sorbonne, the excitement was so great that every one ran out without knowing precisely what he was doing; the professor himself declared that he had no power of controlling his deep emotion." L. H. S.

— The Medical Colleges of New York are once more in the full tide of successful operation. The *University Medical College* opened its annual session Monday, Oct. 15, with an introductory lecture by Prof. Valentine Mott. The subject of the lecture was the Present State of Medical Science and its Progress during the last decade of years.

The *New York Medical College* commenced its regular session Wednesday, Oct. 17, which was inaugurated by a lecture in the laboratory, by the Professor of Chemistry, Dr. R. Ogden Doremus. The subject of the lecture was Carbonic Acid Gas, which was illustrated with many brilliant experiments. At the close of the experimental lecture,

Dr. Doremus addressed the audience upon the relations existing between medical schools, the medical profession, and the public, giving a history of the rise of the new Hospital which is now attached to this school. The vacancies existing in the Faculty of the New York Medical College have all been filled by the appointment of Dr. R. K. Browne to the Chair of Physiology; of Dr. George Thurber as Lecturer on Materia Medica, Botany, and Pharmacy; Dr. Joseph Schnetter as Lecturer on Pathological Anatomy; Dr. W. R. Whitehead as Lecturer on Clinical Medicine; and Dr. M. Bradley as Adjunct Professor of Anatomy.

The *College of Physicians and Surgeons* opened its session on Monday, Oct. 22, by a lecture on the History of the Circulation of the Blood, by Prof. JOHN C. DALTON, JR. With the commencement of this session, the College of Physicians and Surgeons becomes the Medical Department of Columbia College, and President King took the opportunity of the opening of the session, to inaugurate this completion of the University by the union of the Medical Department to those of Law and Literature, already in operation.

— Dr. John H. Tate, of Cleveland, O., has been appointed to the Chair of Obstetrics in the Cincinnati College of Medicine and Surgery.—Dr. G. M. B. Maughs, of Kansas City, has been appointed to the Chair of Chemistry and Physiology in the Missouri Medical College.—Drs. Logan and W. F. Westmoreland have retired from the editorial management of the *Atlanta Medical and Surgical Journal*.—Prof. E. M. Moore, formerly of Starling Medical College, has been appointed to the Chair of Surgery in the Buffalo School.—Prof. L. M. Lawson, recently of the Medical College of Ohio, will occupy the Chair of Clinical Medicine in the University of La.—Dr. G. A. Peters has been elected as Surgeon to the New York Hospital, to supply the vacancy made by the recent resignation of Dr. Van Buren.—Dr. Foster Swift has been appointed Lecturer Adjunct to the Professor of Obstetrics in the College of Physicians and Surgeons, in the place of Dr. Geo. T. Elliott, resigned.—Dr. F. T. Miles succeeds Dr. Holbrook in the Chair of Anatomy in the Medical College of the State of South Carolina.—Dr. J. Troup Maxwell has accepted the Chair of Obstetrics in the Oglethorpe Medical College, Savannah, Ga.—The *Boston Journal of Physical Culture* is the title of a monthly publication devoted to Gymnastics, and edited by Dr. Lewis.—A new work by Prof. Hodge, of Philadelphia, on Diseases of Females, is soon to appear.—A work by Prof. Gross, entitled American Medical Biography, is in the press of Messrs. Lindsay & Blakiston.